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- Other:

Welcome to

THE HUNTER MARINE FAMILY

Congratulations on your new sailing yacht manufactured by Hunter Marine. We have engineered and constructed your boat to be as fine a yacht as any afloat. In order to get the best performance and most enjoyment from your boat you should be familiar with its various elements and their functions. For your sailing pleasure and safety, please take time to study this manual.

We stand behind the quality of your boat with a warranty, which you should review. To insure the validity of your warranty, please complete the attached card and send it to us within ten (10) days of the purchase date. Section 15 of the U.S. Federal Boat Safety Act requires registration of a boat's first owner. The warranty data should also be recorded in the space below for your own reference.

This manual has been compiled to help you operate your craft with safety and pleasure. It contains details of the craft; equipment supplied or fitted, systems, and information on operation and maintenance. Please read it carefully, and familiarize yourself with the craft before using it. If this is your first sailboat or you are changing to a type of craft you are not familiar with, please ensure that you obtain proper handling and operating experience before you assume command of the craft. Your dealer or national sailing federation or yacht club will be pleased to advise you of local sea schools or competent instructors.

PLEASE KEEP THIS MANUAL IN A SAFE PLACE AND HAND IT OVER TO THE NEW OWNER IF YOU SELL THE CRAFT.

You should also complete the warranty cards for your engine, stove, head, electric water pump and other accessories. These are enclosed in the manufacturers' manuals that are packaged with your owner's manual.

OWNER INFORMATION CARD

HULL IDENTIFICATION NUMBER IS ON THE STARBOARD AFT SIDE OF THE HULL OR TRANSOM.
THIS NUMBER MUST BE GIVEN IN ALL NECESSARY CORRESPONDENCE.

HULL NO. *DATE DELIVERED TO OWNER*

YACHT NAME

OWNER NAME

STREET ADDRESS

CITY *STATE/COUNTRY* *ZIP CODE*

HOME PORT

ENGINE MODEL *SERIAL NO.* *PROPELLER SIZE*

DEALER *PHONE*

STREET ADDRESS

CITY *STATE/COUNTRY* *ZIP CODE*

CUSTOMER SERVICE / WARRANTY

The following warranties apply to all 2004 Model Year boats produced by HUNTER MARINE CORPORATION:

LIMITED ONE-YEAR WARRANTY

Hunter Marine warrants to the first-use purchaser and any subsequent owner during the warranty period that any part manufactured by Hunter will be free of defects caused by faulty workmanship or materials for a period of twelve (12) months from the date of delivery to the first-use purchaser under normal use and service. During this period, Hunter will repair or replace any part judged to be defective by Hunter, after it is reviewed by the selling dealership.

LIMITED FIVE-YEAR HULL STRUCTURE AND BOTTOM BLISTER WARRANTY

Hunter warrants to the first-use purchaser and any subsequent owner during the warranty period that the hull of each boat will be free from structural defects in materials and workmanship for a period of five (5) years from the date of delivery to the first-use purchaser under normal use and service.

This limited warranty applies only to the structural integrity of the hull and the supporting pan/grid or stringer system. Hulls, pan/grid or stringers modified in any way or powered with engines other than the type and size installed or specified by Hunter are not covered by this limited warranty. The obligation of Hunter under this limited warranty is limited to the repair or replacement of hulls that it determines to be structurally defective. This is your sole and exclusive remedy.

Hunter also warrants to the first-use purchaser and any subsequent owner during the warranty period that the boat will be free from gel-coat blistering on underwater surfaces of the hull, excluding the keel and rudder, for a period of five (5) years from the date of delivery to the first-use purchaser under normal use and service. During this period, Hunter will supply or reimburse an authorized Hunter dealer for all of the parts and labor required to repair a blistered underwater surface of the hull. The labor cost reimbursement will be based on the Labor Allowance Schedule established by Hunter from time to time, however if the repair is performed by a non-Hunter dealer, the repair cost must be authorized by Hunter in advance and be based on a reasonable number of hours as determined by Hunter. Hunter will not pay transportation, hauling, launching, bottom paint, storage, dockage, cradling rental, rigging and derigging, or other similar costs. It is recommended that the repair be done during a seasonal haul out for service or storage.

The following circumstances will void the bottom blister limited warranty:

(1) If the gel-coat has been sanded, sandblasted, or subjected to abrasion or impact.

(2) If the instructions provided in the Hunter Owner's Manual are not followed according to Hunter's required bottom preparation procedures.

RESTRICTIONS APPLICABLE TO WARRANTIES

These limited warranties **do not cover**:

(1.) Paint, window glass, Gelcoat, upholstery damage, plastic finishes, engines, engine parts, bilge pumps, stoves, blowers, pressure water pumps, propellers, shafts, rudders, controls, instruments, keels and equipment not manufactured by HUNTER. Any warranty made by the manufacturer of such items will be, if possible, given on to the first use purchaser.

(2.) Problems caused by improper maintenance, storage, cradling, blocking, normal wear and tear, misuse, neglect, accident, corrosion, electrolysis or improper operation.

(3) Boats used for commercial activities including charter.

THESE LIMITED WARRANTIES ARE YOUR SOLE AND EXCLUSIVE REMEDIES AND ARE ESPRESSLY IN LIEU OF ANY AND ALL OTHER REMEDIES AND WARRANTIES EXPRESSED AND IMPLIED, INCLUDING THE WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, WHETHER ARISING BY LAW, CUSTOM, CONDUCT, OR USAGE OF TRADE. SOME STATES DO NOT ALLOW LIMITATIONS ON HOW LONG AN IMPLIED WARRANTY LASTS, SO THE ABOVE LIMITATION MAY NOT APPLY TO YOU. IN THE EVENT THAT IMPLIED WARRANTIES ARE FOUND TO EXIST UNDER THE LAW OF A PARTICULAR STATE, NOTWITHSTANDING THE EXCLUSION CONTAINED HERIN, THE DURATION OF ANY SUCH IMPLIED WARRANTY SHALL BE LIMITED TO THE DURATION OF THE APPLICABLE LIMITED WARRANTY STATED HEREIN. THE PURCHASER ACKNOWLEDGES THAT NO OTHER REPRESENTATIONS WERE MADE TO HIM OR HER WITH RESPECT TO THE QUALITY OR FUNCTION OF THE BOAT. ANY ORAL STATEMENT OR PRINTED MATERIAL ADVERTISING THE BOAT WHICH SPEAKS TO ANY PERFORMANCE CHARACTERISTIC OF THE BOAT OR ANY OF ITS COMPONENTS SHALL BE CONSIDERED AND CONSTRUED AS AN ESTIMATED DESCRIPTION ONLY AND SHOULD NOT BE RELIED UPON AS AN EXPRESS WARRANTY OR AS THE BASIS OF THE BARGAIN FOR THE BOAT OR ANY OF ITS COMPONENTS.

ANY CONSEQUENTIAL, INDIRECT OR INCIDENTAL DAMAGES WHICH MAY BE INCURRED ARE EXCCLUDED AND PURCHASER'S REMEDY IS LIMITED TO REPAIRS OR REPLACEMENT OF ANY PART(S) JUDGED DEFECTIVE BY HUNTER MARINE. SOME STATES DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL OR INDIRECT DAMAGES, SO THE ABOVE LIMITATION OR EXCLUSION MAY NOT APPLY TO YOU. THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS, AND YOU MAY ALSO HAVE OTHER RIGHTS WHICH VARY FROM STATE TO STATE.

WARRANTY REGISTRATION

These limited warranties shall not be effective unless the HUNTER Warranty Registration Form and Pre-Delivery Service Record, which are furnished with each new boat, are filled out completely and returned to HUNTER within ten (10) days of delivery.

Return of the Warranty Registration Form to HUNTER, signed by both Dealer and Owner, is critical. Warranty coverage cannot be initiated until the completed form is received at HUNTER.

All repairs and/or replacements will be made by an authorized Hunter dealer, or at the option of Hunter, at the Hunter plant. If the repairs are of such a nature that the warranty work must be performed at the HUNTER plant, transportation costs to and from the HUNTER plant shall be paid by the owner. The labor cost reimbursement will be based on a Labor Allowance Schedule established by HUNTER and where not applicable, on a reasonable number of hours as determined by HUNTER. Any repairs and replacements must be approved in advance by an authorized HUNTER service representative.

TRANSFER OF LIMITED WARRANTIES

For 1995 and later hull numbers, the limited warranties will be transferred to a subsequent purchaser of the boat if:

(1) A notice of the transfer of ownership of the boat is given by the subsequent purchaser in writing to Hunter within thirty (30) days of the transfer.

(2) The notice shall include the name, address and telephone number of the subsequent purchaser, the date of purchase, the hull number and the name of the seller of the boat.

Hunter will mail to the subsequent purchaser notice of the expiration dates of the limited warranties. (see form letter, attached) The transfer of the ownership of the boat will not extend the expiration dates of the limited warranties.

CUSTOMER SATISFACTION SURVEYS

During the first year of ownership, the first purchaser will receive two Customer Satisfaction Surveys - the first (CSS#1) will be received shortly after taking delivery and focuses on the dealer's ability to sell and commission the boat, and the Owner's initial satisfaction. The second survey (CSS#2), nine to ten months into ownership, "measures" dealer service capability and allows the owner to evaluate most of the boat's functional systems and characteristics. Both surveys are dependent upon receipt of the first purchaser's Warranty Registration Form.

SAMPLE FORM LETTER

March 12, 1997

Mr. John Smith
1456 Joy Street
Sarasota, FL 34266

Dear Mr. Smith,

Thank you for providing written notice of transfer of ownership. We are pleased you have selected a Hunter sailboat and we will make every effort to assure Hunter ownership will be a satisfying experience for you.

Based on the information you have provided, we are pleased to notify you of the expiration dates of the limited warranties.

- The limited **one-year** New Boat warranty expires (d)_____.
- The limited **five-year** Hull Structure and Bottom Blister warranty expires (d)_____.

Should you require assistance at any time during ownership, we encourage you to contact your Hunter dealer or to call us directly at 386-462-3077.

Please confirm the information at the bottom of the page and advise us if any corrections are required.

_____
Customer Service Manager

Hull No: HUN_____ Model:_____

Telephone: (H)_____(B)_____

Date of Purchase:_____

Purchased From: Name:_____

Address:_____

City/State_____Zip_____

( ) Private Owner ( ) Dealer

Warranty Procedure

Following is a detailed outline of the Hunter Warranty Policy. Please read it carefully. The major points are:

- Always refer to the hull number
- Phone or fax us for authorization on warranty work over a $200 USD estimate.
- Send in the warranty claim within thirty (30) days of the repair.

1) All customer warranty problems must be handled through the selling dealer.
   a) Boats must be returned to the selling dealer.
   b) Dealer will contact Hunter Marine and give a brief description of the problem and an estimate of time and cost to correct problem (include complete hull #).
   c) All warranty involving associated equipment--engines, bilge pumps, stoves, pressure water pumps, instrument panels, etc.-- will be handled direct with the manufacturer of said equipment on an exchange basis.

2) For any problem that the dealer cannot correct, the dealer will contact Hunter Marine who will take corrective measures immediately. The repairs may be of such a nature that the customer will have to return the boat to manufacturer at his cost.

3) Hunter Marine will not pay for warranty items that should have been covered in a Pre-Delivery Service check. (See Pre-Delivery Service Check Record.)

4) Hunter Marine will not be responsible for inconveniences, or for losses incurred as a result of defect. Hunter Marine will take measures to correct only the defect.

5) Hunter Marine will apply a base labor rate of $42.00 per hour for warranty repairs, providing all documentation on sold boats has been submitted to Hunter Marine. If you or your employee(s) have attended the recent Hunter Service Training Program and received a Certificate of Training and all documentation has been submitted, the labor rate will be $54.00 per hour on boats your dealership has sold ($60.00 per hour if a boat your dealership DID NOT sell). Hunter Marine will allow $5.00 per foot to haul-out, if necessary and approved.

6) Hunter will not assume any responsibility or liability for parts replaced or any work done by others, without written authorization from Hunter.

7) Photographs are required on all fiberglass warranty work.

8) Warranty work under $200.00 can be done without prior authorization. Any work estimates at more than $200.00 must have prior approval and receive an authorization number for our records.

9) Warranty claims must be sent in duplicate and must contain the **complete** hull number and a brief description of work performed. Labor, parts, materials, and haul-outs must be listed separately. Claims for warranty must be sent to Hunter Marine not more than thirty (30) days after completion of work, or they may not be honored.

HUNTER MARINE'S OWNER AND FOUNDER

WARREN R. LUHRS

BRIEF BACKGROUND

Warren Luhrs was born in East Orange, New Jersey in 1944 into a family with an established tradition in the maritime and transportation industries. His great-grandfather, Henry, was a railroad and clipper-shipping pioneer in America, while his great-uncle John helped build the famous St. Petersburg to Moscow railroad for Czar Alexander II.

Henry Luhrs owned shares in twenty-two different ocean-going vessels – barks, brigs, and schooners - and was the principal owner of the bark *Sophia R. Luhrs*, named for his wife. He was also a partner with Albert Sprout, who managed the shipyard where the *Sophia R. Luhrs* was built in Melbridge, Maine.

Warren Luhrs' father Henry worked at a small boat manufacturer in Morgan, New Jersey, and later started his own company, continuing the Luhrs' family sea tradition during the great depression. During World War II he repaired boats and installed ice sheathing on their bows for the Coast Guard.

After the War, Henry built 27-foot fishing boats and in 1948 began to construct custom-built pleasure craft. He then turned to skiffs and in 1952 incorporated as Henry Luhrs Sea Skiffs, where he constructed lapstrake sea skiffs using assembly-line techniques. Henry personally "shook down" his prototypes on family trips up the Hudson River to Lake Champlain.

The sea skiff is a class of boat that has been very popular, owing to its seaworthiness. It features a sharp bow, which reduces pounding in surf or choppy seas, and a hull whose forward section is rounded below the waterline to increase stability in rough water or a following sea. Such skiffs can either be smooth sided or of a lapstrake construction.

Inspired by Henry Ford, Henry Luhrs' aimed to give the average man the opportunity to enjoy the luxury of boating by building an affordable and reliable boat. He was both designer and engineer, and his progressive new models exhibited his talent for innovation. He successfully changed the line of the bow from straight to curved at a time when the industry trend was a straight square effect, and he is believed to be the first designer-builder to popularize a small boat with a fly bridge.

In 1960, Luhrs acquired the Ulrichsen Boat Company of Marlboro, New Jersey. It was here that Luhrs' Alura fiberglass division was located. In 1965, Henry sold his company to Bangor Arrostook Railroad, which was to become the recreational conglomerate Bangor-Punta. It was also during this period that Silverton of Tom's River, New Jersey was purchased by John and Warren Luhrs.

Today, Warren R. Luhrs and his brother John own the Luhrs Group of marine manufacturers, which consists of Silverton Marine, Mainship Motor Yachts, and Luhrs Fishing Boats with its Alura division, as well as Hunter Marine, which exclusively manufactures sailboats.

In January of 1996, the Luhrs family transferred a portion of the Luhrs Group to its employees through an ESOP program.

A

Aback: describes a sail when the wind strikes it on the lee side.
Abaft: towards the boat's stern.
Abeam: at right angles to the *centerline* of the boat.
Aft: at or near the stern.
Amidships: the center of the boat, *athwartships* and fore and aft.
Anti-fouling: a poisonous paint compound used to protect the underwater part of a hull from marine growths.
Apparent wind: The direction and speed of the wind felt by the crew. It is a combination of *true wind* and that created by the movement of the boat.
Astern: behind the boat; to go astern is to drive the boat in reverse.
Athwartships: at right angles to the fore and aft line of the boat.

B

Back: when a wind backs, it shifts anticlockwise.
Back a sail: to sheet it to windward so that the wind fills on the side that is normally to *leeward*.
Backstay: a stay that supports the mast from aft and prevents its forward movement.
Ballast: extra weight, usually lead or iron, placed low in the boat or externally on the keel to provide stability.
Ballast keel: a mass of ballast bolted to the keel to increase stability and prevent a keel boat from capsizing.
Batten: a light, flexible strip fed into a batten pocket at the *leech* of the sail to support the *roach*.
Beam: 1, the maximum breadth of a boat; 2, a transverse member that supports the deck; 3, on the beam means that an object is at right angles to the centerline.
Bear away: to steer the boat away from the wind.
Bearing: the direction of an object from an observer, measured in degrees true or magnetic.
Beat: to sail a *zigzag course* towards the wind, *close-hauled* on alternate *tacks.*
Delay: to make fast a rope around a *cleat*, usually with a figure-of-eight knot.
Bend: 1, to secure a sail to a spar before hoisting; 2, to moor a boat; 3, a sleeping place on board.
Bight: a *bend* or loop in a rope.
Bilge: the lower, round part inside the hull where the water collects.
Block: a pulley in a wooden or plastic case, consisting of a *sheave* around which a rope runs. It is used to change the direction of pull.
Boot-topping: a narrow colored stripe painted between the bottom paint and the *topside* enamel.
Bottlescrew: see Rigging screw.
Broach: when a boat *running* downwind slews broadside to the wind and *heels* dangerously. It is caused by heavy following seas or helmsman's error.
Broad reach: the point of sailing between a beam *reach* and a *run*, when the wind blows over a quarter.
Bulkhead: a partition wall in a boat normally fitted athwartships

C

Caulk: to make the seams between wooden planks watertight by filling with cotton, oakum or a compound.
Cavitation: the formation of a vacuum around a propeller, causing a loss in efficiency.
Center-board: a board lowered through a slot in the *keel* to reduce *leeway*.
Center-line: center of the boat in a fore and aft line.
Center of effort (COE): the point at which all the forces acting on the sails are concentrated.
Center of lateral resistance (CLR): the underwater center of pressure about which a boat pivots when changing *course*.
Chain pawl: a short lug which drops into a toothed rack to prevent the anchor chain running back.
Chain plate: a metal plate bolted to the boat to which the *shrouds* or *backstays* are attached.
Chart datum: reference level on a chart below which the tide is unlikely to fall. Soundings are given below chart datum. The datum level varies according to country and area.
Chine: the line where the bottom of the hull meets the side at an angle.
Cleat: a wooden, metal or plastic fitting around which rope is secured.
Clevis pin: a locking pin through which a split ring is passed to prevent accidental withdraw.
Clew: the after, lower center of a sail where the foot and *leech* meet.
Close-hauled: the *point of sailing* closest to the wind; see also *beat*.
Close reach: the *point of sailing* between *close-hauled* and a beam reach, when the wind blows forward of the *beam*.
Close-winded: describes a boat able to sail very close to the wind.
Coaming: the raised structure surrounding a hatch, cockpit, etc., which prevents water entering.
Cotter pin: soft, metal pin folded back on itself to form an eye.
Course: the direction in which a vessel is steered, usually given in degrees; true, magnetic or compass.
Cringle: 1, a rope loop, found at either end of a line of reef points; 2, an eye in a sail.

D

Dead run: running with the wind blowing exactly aft, in line with the *centerline*.
Deviation: the difference between the direction indicated by the compass needle and the magnetic *meridian*; caused by object aboard.
Displacement: 1, the weight of water displaced by a boat is equal to the weight of the boat; 2, a displacement hull is one that displaces its own weight in water and is only supported by buoyancy, as opposed to a planning hull which can exceed its hull, or displacement, speed.
Downhaul: a rope fitted to pull down a sail or spar.
Draft: the vertical distance from the waterline to the lowest point of the keel.
Drag: 1, an anchor drags when it fails to hole; 2, the force of wind on the sails, or water on the hull, which impedes the boat's progress.
Drift: 1, to float with the current or wind; 2, US the speed of a current

(rate UK); 3, UK: the distance a boat is carried by a current in a given time.
Drogue: a sea anchor put over the stern of a boat or life raft to retard *drift*.
Drop keel: a retractable *keel* which can be drawn into the hull, when entering shallow waters and recovering on to a trailer.

E

Eye of the wind: direction from which the true wind blows.

F

Fair: well-faired line or surface is smoother with no bumps, hollows or abrupt changes in directions.
Fairlead: a fitting through which a line is run to alter the lead of the line.
Fathom: the measurement used for depths of water and lengths or rope. 1 fathom = 6 ft. or 1.83m.
Fid: a tapered tool used for *splicing* heavy rope and for sail-making, often hollow.
Fiddle: a raised border for a cabin table, chart table etc., to prevent objects falling off when the boat *heels*.
Fix: the position of the vessel as plotted from two or more position lines.
Forestay: the foremost stay, running from the masthead to the stemhead, to which the headsail is hanked.
Freeboard: vertical distance between the *waterline* and the top of the deck.

G

Genoa: a large headsail, in various sizes, which overlaps the mainsail and is hoisted in light to fresh winds on all points of *sailing.*
Gimbals: two concentric rings, pivoted at right angles, which keeps objects horizontal despite the boat's motion, e. g. compass and cooker.
Go about: to turn the boat through the *eye of the wind* to change tack.
Gooseneck: the fitting attaching the boom to the mast, allowing it to move in all directions.
Goosewing: to boom-out the headsail to windward on a run by using a *whisker pole* to hold the sail on the opposite side to the mainsail.
Ground tackle: general term used for anchoring gear.
Guard rail: a metal rail fitted around the boat to prevent the crew falling overboard.
Gudgeon: a rudder fitting. It is the eye into which the *pintle* fits.
Guy: a steadying rope for a spar; a spinnaker guy controls the fore and aft position of the spinnaker pole; the foreguy holds the spinnaker pole forward and down.
Gybe: to change from one *tack* to another by turning the stern through the wind.

H

Halyard: rope used to hoist and lower sails.
Hank: fitting used to attach the *luff* of a sail to a stay.
Hatch: an opening in the deck giving access to the interior.
Hawes pipe: see *Navel pipe*.
Head-topwind: when the bows are pointing right into the wind.
Headfoil: a streamlined surround to a *forestay*, with a groove into which a headsail *luff* slides.
Heads: the toilet.
Headway: the forward movement of a boat through the water.
Heave-to: to *back* the jib and lash the tiller to *leeward*; used in heavy weather to encourage the boat to lie quietly and to reduce *headway.*
Heaving line: a light line suitable for throwing ashore.
Heel: to lean over to one side.

I

Isobars: lines on a weather map joining places of equal atmospheric pressure.

J

Jackstay: a line running fore and aft, on both sides of the boat, to which safety harnesses are clipped.
Jury: a temporary device to replace lost or damaged gear.

K

Keel: the main backbone of the boat to which a *ballast keel* is bolted or through which the *centerboard* passes.
Kicking strap: a line used to pull the boom down, to keep it horizontal, particularly on a reach or run.

L

Lanyard: a short line attached to one object, such as a knife, with which it is secured to another.
Leech: 1, the after edge of a triangle sail; 2, both side edges of a square sail.
Leehelm: the tendency of a boat to bear away from the wind.
Lee shore: a shore on to which the wind blows.
Leeward: away from the wind; the direction to which the wind blows.
Leeway: the sideways movement of a boat off its *course* as a result of the wind blowing on one side of the sails.
Lifeline: a wire or rope rigged around the deck to prevent the crew falling overboard.
Limber holes: gaps left at the lower end of frames above the *keel* to allow water to drain to the lowest point of the *bilges*.
List: a boat's more or less permanent lean to one side, owing to the improper distribution of weight, e.g., *ballast* or water.
Log: 1, an instrument for measuring a boat's speed and distance traveled through the water; 2, to record in a book the details of a voyage, usually distances covered and weather.
Luff: the forward edge of a sail. To luff up is to turn a boat's head right into the wind.
Luff groove: a groove in a wooden or metal spar into which the *luff* of a headsail is fed.
Lurch: the sudden roll of a boat.

M

Marlin spike: a pointed steel or wooden spike used to open up the strands of rope or wire then splicing.
Mast Step: the socket in which the base of the mast is located.
Measured mile: a distance of one nautical mile measured between buoys or *transits/ranges* ashore, and marked on the chart.

Member: a part of the skeleton of the hull, such as a *stringer* laminated into fiberglass hull to strengthen it.
Meridian: an imaginary line encircling the Earth that passes through the poles and cuts at right angles through the Equator. All lines of longitude are meridians.
Mizzen: 1, the shorter, after-mast on a *ketch* or *yawl*; 2, the fore and aft sail set on this mast.

N

Navel pipe: a metal pipe in the foredeck through which the anchor chain passes to the locker below.
Noon Sight: a vessel's latitude can be found, using a sextant, when a heavenly body on the observer's *meridian* is at its greatest altitude. The sight of the sun at noon is the one most frequently taken.

O

Off the wind: with the sheets slacked off, not *close-hauled.*
On the wind: *close-hauled*.
Out haul: a rope used to pull out the foot of a sail.
Overall length (LOA): the boat's extreme length, measured from the foremost past of the bow to the aftermost part of the stern, excluding bowspirt, self-steering gear etc.

P

Painter: the bow line by which a dinghy, or *tender,* is towed or made fast.
Pintle: a rudder fitting with a long pin that fits into the *gudgeon* to form a hinged pivot for the rudder.
Pitch: 1, the up and down motion of the bows of a boat plunging over the waves; 2, the angle of the propeller blades.
Point of sailing: the different angles from which a boat may sail; the boat's *course* relative to the direction of the wind.
Port: the left-hand side of the boat, looking forward (opp. of *starboard*).
Port tack: a boat is on a port tack when the wind strikes the port side first and the mainsail is out to *starboard.* A boat on the port tack gives way to a boat on a starboard tack.
Position line/ Line of position: a line drawn on a chart, as a result of taking a bearing, along which the boat's position must be i.e. Two position lines give a fix.
Pulpit: a metal *guard rail* fitted at the bows of a boat to provide safety for the crew.
Pushpit: a metal *guard rail* fitted at the stern.

Q

Quarter: the portion of the boat midway between the stern and the beam; on the quarter means about 45 degrees *abaft* the beam.

R

Rake: the fore and aft deviation from the perpendicular of a mast or other feature of a boat.
Range: 1, see *transit;* 2, of tides, the difference between the high and low water levels of a tide; 3, the distance at which a light can be seen.
Rating: a method of measuring certain dimensions of a yacht to enable it to take part in handicap races.
Reach: to sail with the wind approximately on the *beam*; all sailing points between running and *close-hauled*.
Reef: to reduce the sail area by folding or rolling surplus material on the boom or *forestay*.
Reefing pennant: strong line with which the *luff* or leech *cringle* is pulled down to the *boom* when reefing.
Rhumb line: a line cutting all *meridians* at the same angle; the *course* followed by a boat sailing in a fixed direction.
Riding light to anchor light: an all-around white light, usually hoisted on the forestay, to show that a boat under 50 ft. (15m.)is at anchor. It must be visible for 2 mls. (3 km.).
Rigging screw: a deck fitting with which the tensions of standing rigging, e.g. stays, shrouds, etc. are adjusted.
Roach: the curved part of the *leech* of a sail that extends beyond the direct line from head to *clew.*
Run: to run with the wind *aft* and with the *sheets* eased well out.
Running rigging: all the moving lines, such as *sheets* and *halyards*, used in the *setting* and *trimming* of sails.

S

Scope: the length of rope or cable paid out when mor anchoring.
Scuppers: 1, holes in the toe rail that allow water to drain off the deck; 2, drain cockpit through hull.
Seacock: a valve that shuts off an underwater inlet or outlet passing through the hull.
Seize: to bind two ropes together, or a rope to a *spar*, with a light line.
Serve: to cover and protect a *splice* or part of a rope with twine bound tightly against the lay.
Serving mallet: tool with a grooved head, used when serving a rope to keep the twine at a constant and high tension.
Set: 1, to hoist a sail; 2, the way in which the sails fit; 3, the direction of tidal current or steam.
Shackle: a metal link with a removable bolt across the end; of various shapes: D, U.
Sheave: a grooved wheel in a *block* or *spar* for a rope to run on.
Sheet: the rope attached to the *clew* of a sail or to the boom, enabling it to be controlled or *trimmed*.
Shrouds: ropes or wires, usually in pairs, led from the mast to the *chain plates* at deck level to prevent the mast falling sideways; part of the standing rigging.
Sloop: a single-masted sailing boat with a mainsail and one head sail.
Spar: a general term for any wooden or metal pole, e.g., mast or boom, used to carry or give shape to sails.
Spindrift: spray blown along the surface of the sea.
Spinnaker: a large, light, balloon shaped sail set when *reaching* or *running.*
Splice: to join ropes or wire by unlaying the strands and interweaving them.
Split pin: see *cotter pin.*
Spreaders: horizontal struts attached to the mast, which extends to the *shrouds* and help to support the mast.

Stall: a sail stalls when the airflow over it breaks up, causing the boat to lose way.
Stanchion: upright metal post bolted to the deck to support guardrails or lifelines.
Standing part: the part of a line not used when making a knot; the part of a rope that is made fast, or around which the knot is tied.
Standing rigging: the shrouds and stays that are permanently set up and support the mast.
Starboard: right-hand side of a boat looking forward (opp. of *port*).
Starboard tack: a boat is the starboard tack when the wind strikes the starboard side first and the boom is out to the *port*.
Stay: wire or rope which supports the mast in a fore and aft direction; part of the *standing rigging*.
Steerage way: a boat has steerage way when it has sufficient speed to allow it to be steered, or to answer the helm.
Stem: the timer at the bow, from the keel upward, to which the planking is attached.
Sternway: the backward, stern-first movement of a boat.
Stringer: a fore and aft member, fitted to strengthen the frames.

T

Tack: 1, the lower forward corner of a sail; 2, to turn the boat through the wind so that it blows on the opposite sides of the sails.
Tacking: working to windward by sailing *close-hauled* on alternate *courses* so that the wind is first on one side of the boat, then on the other.
Tack pennant: a length of wire with an eye in each end, used to raise the tack of a headsail some distance off the deck.
Tackle: a purchase system comprising of rope and *blocks* that is used to gain mechanical advantage.
Tang: a strong metal fitting by which *standing rigging* is attached to the mast or other *spar*.
Tender of dinghy: a small boat used to ferry stores and people to a yacht.
Terminal fitting: fitting at the end of a wire rope by which a *shroud* or stay can be attached to the mast, a *tang* or a *rigging screw/ turnbuckle*.
Tide: the vertical rise and fall of the oceans caused by the gravitational attraction of the moon.
Toe rail: a low strip of metal or molding running around the edge of the deck.
Topping lift: a line from the masthead to a spar, normally the boom, which is used to raise it.
Topsides: the part of a boat's hull that is above the waterline.
Track: 1, the course a boat has made good; 2, a fitting on the mast or boom into which the slides on a sail fit; 3, a fitting along which a traveller runs, used to alter the angle of the sheets.
Transit: two fixed objects are in transit when seen in line; two transit give position fix.
Traveller: 1, a ring or hoop that can be hauled along a *spar*; 2, a fitting that slides in a *track* and is used to alter the angle of the *sheets*.
Trim: 1, to adjust the angle of the sails, by means of *sheets*, so that they work most efficiently; 2, to adjust the boat's load, and thus the fore and aft angle at which it floats.
True wind: the direction and speed of the wind felt when stationary, at anchor or on land**.**
Turnbuckle: see *Rigging screw*.

U

Under way: a boat is under way when it is not made fast to shore, at anchor or aground.
Uphaul: a line used to raise something vertically, e.g., the spinnaker pole.

V

Veer: 1, the wind veers when it shifts in clockwise direction; 2, to pay out anchor cable or rope in a gradual, controlled way.

W

Wake: the disturbed water left *astern* of a boat.
Waterline: the line along the hull at which a boat floats.
Waterline length (WL): the length of a boat from *stem* to *stern* at the *waterline*. It governs the maximum speed of *displacement hull* and effects a boats *rating*.
Weather helm: (opp. of *lee helm*).
Weather side: the side of a boat on which the wind is blowing.
Wetted surface: the area of the hull under water.
Whisker pole: a light pole used to hold out the *clew* of a headsail when *running*.
Winch: a mechanical device, consisting usually of a metal drum turned by a handle, around which a line is wound to give the crew more purchasing power when hauling taut a line, e.g. a jib *sheet*.
Windage: those parts of a boat that increase *drag*, e.g., rigging, spars, crew, etc.
Windlass: a *winch* with a horizontal shaft and a vertical handle, used to haul up the anchor chain.
Windward: the direction from which the wind blows; towards the wind (opp. of leeward).

Y

Yawl: a two masted boat with a mizzen stepped aft of the rudder stock/ post.

EXPLANATION OF SAFETY PRECAUTIONS

This manual contains safety precautions that must be observed when operating or servicing your boat.
Review and understand these instructions.

⚠ DANGER

Denotes an extreme intrinsic hazard exists which would result in high probability of death or irreparable injury if proper precautions are not taken

⚠ WARNING

Denotes a hazard exists which can result in injury or death if proper precautions are not taken

⚠ CAUTION

Denotes a reminder of safety practices or directs attention to unsafe practices which could result in personal injury or damage to the craft or components

SAFE BOATING TIPS

BE PREPARED

Take a safe boating course. In the U.S., contact your local Boating Industry for details.
Carry all safety equipment required by the laws that apply to your area. Requirements are generally available from the Coast Guard or your local boating industry.

⚠ WARNING

As the owner of the craft, obtaining and maintaining necessary safety equipment is your responsibility. For more information about equipment required, contact local boating authorities

SAFE BOATINGTIPS

MINIMUM RECOMMENDED SAFETY EQUIPMENT

- Required life saving equipment, including life vests and throwables
- Required fire extinguishing equipment
- First Aid kit
- Emergency Position Indicating Radio Beacon (EPIRB)
- Manual bailing device
- Anchor with sufficient line and/or chain
- Flashlight with good batteries
- Binoculars
- VHF radio
- Appropriate navigational charts
- Flares
- Fog bell
- Noise emitting device
- Radar reflector
- Sufficient food and water provisions
- Auxiliary starting battery
- Spare fuses and bulbs
- Sunglasses and block
- Blanket

The legally required on-board safety equipment may vary by region or body of water. Please check with local authorities prior to departure for a safety examination.

LIFE JACKETS

A life jacket may save your life, but only if you wear it. Keep jackets in a readily accessible place – not in a closed compartment or stored under other gear. Remove them from any packaging, and keep throwable floatation devices ready for immediate use.

⚠ WARNING

It is very important that children, handicapped people, and non-swimmers wear lifejackets at all times. Make sure all passengers are properly instructed in use of life saving gear

FIRE EXTINGUISHERS

Approved fire extinguishers are required on most boats, local authorities can provide details. All passengers should know the location and operating procedure of each fire extinguisher. Fire extinguishers are normally classified according to fire type. Be familiar with the type of fire extinguishers you have on board.

Some boats have been equipped with an Automatic Fire Extinguisher). In the event of a fire in your engine compartment, this unit will automatically discharge. Please read your SEA-FIRE manual for operating instructions, maintenance and precautionary information.

BACKUP RUDDER SYSTEM

Rudder failure or loss is something Boat Operators MUST be prepared for. Hunter Marine has a backup rudder system that can be purchased for our current models 38 feet and up. Other commercial suppliers offer similar systems at differing benefits and costs and you should conduct your own analysis to determine which alternative is best for you.

Because the Backup Rudder System may also be lost, Boat Operators MUST be able to sail without rudder or otherwise be prepared to assemble a makeshift rudder.

SAFE BOATINGTIPS

FLARES

Most boats operating on coastal waters are required to carry approved visual distress signals, therefore check with your local authorities as to which types are required.

⚠ WARNING

FIRE/EXPLOSION HAZARD; Pyrotechnic signaling devices can cause injury and property damage if not handled properly. Follow manufacturer's directions regarding the proper use of signaling devices.

DRUGS AND BOATING

Consumption of alcohol while boating is not recommended. The combination of noise, sun, wind, and motion act to produce fatigue on the water, and can exaggerate the effects of alcohol.

⚠ WARNING

IMPAIRED OPERATION HAZARD

Operating any boat while is intoxicated or under the influence of drugs is both dangerous and illegal. Impaired vision or judgment on the water can lead to accidents and personal injury

BEFORE GETTING UNDERWAY

- Leave a float plan (example on p. 13)
- Perform a pre-departure checklist (example on p. 12)
- Check the weather. Do not venture out if the weather is, or will be, threatening.

WHILE UNDERWAY

- Keep a good lookout. Keep a watch to the leeward under the headsail. Keep away from swimmers, divers, and skiers.
- Know and obey local boating laws.
- Respect bad weather, and be prepared for quickly changing conditions.

⚠ WARNING

COLLISION HAZARD

Use extra caution in shallow water or where underwater/floating objects may be present. Hitting an object at speed or severe angle can seriously injure people and damage your boat

Dear Hunter Owner,

Attached you will find a list of items and recommendations that we believe should be incorporated into your own ongoing list of preventative maintenance items and safety check points. THIS LIST SHOULD NOT BE CONSIDERED A COMPLETE SERVICE MANUAL OR THE ONLY ITEMS ON YOUR BOAT IN NEED OF ROUTINE MAINTENANCE, INSPECTION OR ATTENTION.

You will find that we address commonly found optional equipment items installed on Hunter boats, as well as most standard equipment from Hunter Marine. Owner's need to familiarize themselves with individual equipment manuals on all such items, especially aftermarket purchases or optional equipment installed by your dealer or Hunter Marine. This should insure that you are following the manufacturer's recommendations for proper maintenance and up-keep.

We strongly recommend that all owners complete a Power Squadron course followed with a complementary boat inspection before leaving the dock. To locate a Power Squadron in your area please visit < www.usps.org >.

Reviewing and familiarizing yourself with the Chapman's Piloting Manual is also highly recommended for every boat owner. This manual contains demonstrations for safety drills which should be practiced routinely, dealing with adverse conditions, general boat handling and recommended safety equipment. Our opinion is that no boat owner should operate a boat without first reviewing this manual and without having ready access to it while sailing.

We hope that this list will be beneficial to you in your ongoing maintenance and upkeep. Safe boating!

Thank You

Hunter Marine

Preliminary care and maintenance checklist

A qualified Technician should be used if you are not completely confident in your ability to make repairs or inspections.

Out of Water Inspection

Pre-launch inspection

_____ Sacrificial zinc anodes installed
_____ Propeller installed with keyway, nuts and cotter pin
_____ Propeller shaft turns freely and without excess wobble
_____ Struts and shaft log free of corrosion
_____ Rudder swings easily & correct with wheel direction
_____ Rudder and post inspected for cracks and/or concealed damage (may require removing rudder)
_____ Auxiliary tiller handle properly aligned, fits securely and operational
_____ Backup rudder system complete and operational
_____ All thru-hulls and valves below water line inspected for corrosion, labeled and closed until after launch
_____ Bottom paint in satisfactory condition
_____ Hull freshly cleaned and waxed (free of gelcoat damage)
_____ Mooring, safety lines and fenders onboard and in good condition
_____ House & engine start batteries installed and filled with correct electrolyte levels
_____ House & engine start battery boxes secured
_____ All battery terminals clean and wires secured
_____ Engine block & transmission drains closed
_____Speed / Depth transducers in place. Speed paddle wheel rotates smoothly
_____ Hose clamps on all systems below water line tight
_____ Keel bolts tight and clean
_____ Exhaust hose attached and secured
_____ Boat is free of internal and external water leaks above water line (Failure to stop water intrusion could result in permanent damage or deterioration of structural coring materials, internal wiring and cause mildew and molding)

Mast Assembly

_____ Review manufacturers manual for maintenance and up-keep
_____ Spreaders securely fastened
_____ Mast and spreaders free of corrosion and stress cracks
_____ Standing rigging and pins inspected for wear, tear, corrosion and cracking
_____ External wiring secured for anchor, steaming and deck lights
_____ Electronic wind indicator installed per manufacturers recommendation
_____ Manual wind indicator installed on masthead
_____ VHF antenna installed and connected
_____ Headsail furling system installed inspected per manufacturers recommendation
_____ Running rigging inspected for wear and tear
_____ Mast step stand-up blocks secured and operational
_____ Main Sail, jib sail and flaking system inspected for wear and tear (non-furling mast). In- mast system checked for smooth operation and overall condition of sails
_____ Specified pre-bend and diagonal tensions attained in mast. See owners manual
_____ Mast to deck wiring properly sealed with drip loop

Anchor System and Ground Tackle

_____ Anchor windlass inspected per manufacturers recommendation
_____ Anchor secured in bow roller assembly
_____ Spare anchor onboard and accessible. See Chapman's Manual for recommendations on anchors, anchor lines and drogues
_____ Anchor line pays out and retrieves into anchor locker without difficulty
_____ Bitter end of anchor line secured
_____ Anchor rode inspected and free of abrasions
_____ Anchor chain shackle lock-wired at pin after secured to anchor and corrosion free
_____ Anchor locker hatch secures properly with anchor and line in place
_____ Anchor locker free of debris inside
_____ Anchor locker drains open

Fuel System

_____ Tank fuel level indicator functioning properly
_____ Fuel clean and treated with engine manufacturers recommended additives
_____ Primary and secondary filters cleaned or replaced
_____ Fuel tank supply valves open
_____ Fuel tank vent clear from tank to atmosphere (hose has anti-siphoned loop in place at hull or deck side)

Steering System

_____ Inspect and service steering system according to manufacturer's recommendation
_____ Clean and grease autopilot drive chains
_____ Ensure compass light is operational

Primary Pumps Functional

_____ Manual bilge pumps
_____ Electric bilge pumps and float switches (discharge hose has anti-siphon loop in place to prevent back flow under sail)
_____ Macerator pumps
_____ Fresh water pumps
_____Toilet flush pumps
_____ Shower sump pumps
_____ High water bilge alarm pump

Illumination and small electrical components check

_____ Bow light
_____ Cabin lights
_____ Stern light
_____ Deck light
_____ Instrument lamps
_____ Masthead light
_____ Chart light
_____ Anchor light
_____ Courtesy lights
_____ Reading lights
_____ Distribution panel lights
_____ Smoke detectors operational
_____ CO detectors operational (one per cabin recommended)
_____ Engine & generator room blower operational
_____ Auto fire suppression system operational (engine compartment)
_____ Shore power cord and adapter plug operational. See manufacturer's manual for complete details
_____ 110 or 220 VAC outlets operational – Ground fault circuits functioning
_____ 110 or 220 VAC inverter/battery charging systems functioning properly
_____ Cockpit control systems operational

Fresh Water Systems

_____ Hot water heater drains shut
_____ All spigots and hose bibs shut
_____ All tanks flushed clean and free of debris and antifreeze
_____ Water heater tank and lines flushed of antifreeze
_____ All water lines and components purged of air and checked for leaks
_____ Sinks and drains checked for leaks and adequate flow
_____ Cockpit shower operational
_____ Fresh water filters clean
_____ Tank water level indicator systems operating – labeling and tank valve selection correspond

Head and Holding Tank Systems

_____ Vent clear from tank to atmosphere
_____ Filled with fresh water and test pumped with macerator
_____ Toilets flush to holding tanks properly
_____ Waste level indicating system properly functioning
_____ No leaks at any hose fitting within the system

Galley Systems

_____ Gas bottle filled installed and connected to regulator. Inspect Gas system for leaks after 3 minutes. Should a leak be detected immediately close the main valve exit boat and seek professional assistance for a thorough inspection.
_____ Stove and oven operational. Refer to manufacturer's manual for proper operation and trouble shooting.
_____ Gimbal latch secure and operational
_____ LPG stowage locker drain open and tank storage area free of derbies.
_____ Microwave operational
_____ Refrigerator operational and proper temperature attained
_____ Freezer operational and proper temperature attained
_____ USCG waste disposal-warning poster onboard or in owner's package
_____ Icebox drains to sump or bilge properly
_____ Icebox drain plugs installed

Topside Inspection

_____ Swim seats / ladders / gates operational
_____ Swim seat latch operating correctly
_____ Cockpit hatches operate properly (adjustments should be made with boat in water)
_____ Canvas properly cleaned and installed
_____ Cockpit cushions cleaned and installed
_____ Lifeline fittings tight and secure
_____ Rubrail sealed secured to hull
_____ Sliding hatches drains free of debris
_____ Companionway drop-ins fit properly in companionway and stowage rack
_____ Load bearing hardware sealed and securely fastened. This includes but is not limited to chainplates, winches and handrails
_____ Traveler arch sealed and securely fastened. Stainless Steel models should be properly grounded, see owners manual for details
_____ Plexiglas hatches, ports, windscreens and windows adjusted and cleaned. Cleaners and polishers specifically for Plexiglas can be purchased from most marine supply stores
_____ External teak cleaned and oiled (Teak decking cleaned with mild soap and water)
_____ External railings cleaned with soap and water then hand polished using automotive wax
_____ All deck fill caps seal properly and have retainer chains intact (except Waste Pump-out)
_____ Dorade vents or sealing caps installed
_____ Topside surface clean and free of gelcoat damage

Interior Inspection

_____ Drop-in hatches for bunks and floors in place and fit securely
_____ Interior steps and grab rails secured
_____ Bilges clean and free of debris
_____ Opening port and hatch screens in place
_____ Blinds / privacy curtains, shades and interior cushions cleaned, installed and secured
_____ All doors open / shut / latch properly
_____ Insure all wires and connection on distribution panels are tight (should be professionally inspected)
_____ Television / VCR operational
_____ Stereo / Tape / CD operational
_____ Chapman's Manual onboard and readily available
_____ Safety gear onboard readily available and up to date. See Chapman's Manual and US Coast Guard website at < www.uscg.mil >for details.
_____ Boat owner's manual onboard

In Water Inspection

Dockside inspection of Engine, Pre-start sequence and operating system

_____ Review engine manual for maintenance requirements and proper starting procedure
_____ Propeller shaft properly aligned (per engine manual)
_____ Shaft to engine coupling bolted and properly torque (per engine manual)
_____ All engine mounting bolts in place and properly torque (per engine manual)
_____ Crankcase oil at full mark (per engine manual)
_____ Transmission fluid / oil at full mark (per engine manual)
_____ Coolant mix ratio proper – heat exchanger and expansion tanks full (per engine manual)
_____ Seawater intake valve open and no leaks
_____ Air bled from fuel lines and system
_____ No fuel leaks at any fittings
_____ Throttle linkages smooth and operational
_____ Shutdown system operational
_____ USCG Oil Discharge warning poster in place
_____ Exhaust elbows and hoses tight
_____ Starting sequence and alarms correct
_____ Oil pressure acceptable (per engine manual)
_____ Coolant temperature acceptable (per engine manual)
_____ Alternator DC output at rated rpm (per engine manual)
_____ Correct Idle rpm (per engine manual)
_____ Water discharged with exhaust
_____ Hour meter operational
_____ Fuel level indicators operational
_____ Throttle cable tension set properly
_____ Shifter operation correct
_____ Neutral safety start switch operational
_____ No inboard exhaust gas leaks
_____ No fuel / oil / water leaks on engine
_____ Shaft packing / Drip free Seal adjusted and locknuts tight. One to three drips per minute with shaft turning on traditional packing assembly
_____ Engine box installed and secured

Dockside inspection of Generator, Pre-start sequence and operating system

_____ Review and follow manufacturer's manual for maintenance and up-keep
_____ Seawater strainer water-tight and clean
_____ No leaks in fuel system - Fuel filters clean
_____ Lube oil at full mark
_____ Coolant level full – proper mix ratio with water (per generator manual)
_____ Seawater discharge overboard with exhaust gas
_____ No inboard water or exhaust gas leaks
_____ Proper voltage output to distribution panel (per generator manual)
_____ Ship / Shore power transfer panel function properly
_____ Starter battery box secured
_____ Starter battery cable connections clean and tight
_____ Starting battery electrolyte level proper

Climate Control System

_____ Review and follow manufacturers manual for maintenance and up-keep
_____ Seawater strainer water tight and clean
_____ Seawater pump air purged and operational
_____ Seawater flow adequate fwd and aft
_____ Fwd system functions properly in all modes of operation
_____ Aft system functions properly in all modes of operation
_____ No seawater leaks in system components and lines
_____ No condensation leaks to deck or liner
_____ Air return/intake filters clean and clear
_____ 110 or 220 VAC 30 amp shore power wired correctly at dock
_____ Remote control units and display features operate correctly
_____ Condensation drains open

Dockside Pre-sail inspection

_____ Standing rigging tuned statically – all fittings pinned and secured (re-check after sailing)
_____ Genoa installed and furling system operational
_____ Main sail installed and operates smoothly
_____ Main sail flaking system properly adjusted
_____ All reefing points attained properly
_____ Topping lift and outhaul operational
_____ Sheets / Blocks / Winches operate correctly and easily under load
_____ Genoa Car travels freely full length on tracks port and starboard
_____ All line stoppers operational and labeled
_____ Calibrate all electronic equipment and compass to geographical area.
_____ VHF operational
_____ Battery negative to keel ground voltage check. Mast and arch must be installed for this check. This will verify no wires have shorted out to your keel/lighting ground system. digital multimeter required.
_____ Dockside water connection operable and free of leaks
_____ Complete safety package onboard and up-to date (see Chapman's manual and US Coast Guard rules and regulations)
_____ Secure and evenly distribute all loose equipment and weight
_____ Complementary onboard inspection made by local Power Squadron

Date of inspection: _____

Inspection made by _____

(Several copies may be required to complete each of the following categories)

Chapman's Piloting recommended operating techniques, maintenance inspections and safety points for my particular boat length and type of sailing

Recommendations made by manufacturers of original equipment for proper maintenance and up-keep

Power Squadron recommendations for maintenance and safe boating

Local sailing club or marina's recommendations for maintenance and up-keep

List of onboard safety equipment and location

(A copy should be posted onboard at all times)

Spare parts list

Dates of practice drills and onboard safety inspections

MY PERSONAL PREFERENCES FOR MAINTENANCE ITEMS & SAFETY GEAR

PRE-DEPARTURE CHECKLIST

- ☐ Check bilge for extra water
- ☐ Check weather conditions and tides
- ☐ Check food supply
- ☐ Foul weather gear
- ☐ Linen, sleeping bags
- ☐ Fuel
- ☐ Water
- ☐ Sunscreens and sunglasses
- ☐ Tools
- ☐ Docking and anchor gear
- ☐ Check radio operations
- ☐ Navigation charts and instruments
- ☐ **Float plans to a friend or Coast Guard** (*see next page*)
- ☐ Fuel for stove
- ☐ Cooking and eating utensils
- ☐ Check battery water level
- ☐ Oil level, tight Vp-belts
- ☐ Check for loose electrical connections in engine compartment
- ☐ Secure tools or any loose equipment in engine compartment so as not to get fouled in engine
- ☐ AC systems off; electrical cord stowed
- ☐ Doors and drawers secured
- ☐ Check steering lock to lock
- ☐ Check mast for rigging irregularities and tightness
- ☐ Halyards and sheets are clear and ready to run
- ☐ No lines or other obstructions near propeller or bow
- ☐ Anchor ready to run
- ☐ Check lifelines for tightness
- ☐ Turn on fuel and waterlines
- ☐ Stow all loose gear
- ☐ Open engine cooling water intake thru-hull valve

FLOAT PLAN

1. Name of person reporting and telephone number:

2. Description of boat

NAME TYPE

MAKE LENGTH REGISTRATION#

HULL COLOR STRIPE COLOR DECK COLOR

OTHER DISTINGUISHING MARKS

3. Number of Persons aboard

NAME AGE PHONE #

ADDRESS

NAME AGE PHONE #

ADDRESS

NAME AGE PHONE #

ADDRESS

4. Engine

TYPE H.P. FUEL CAPACITY

5. Safety equipment

PFDs ☐ Flares ☐ Mirror ☐ Flashlight ☐

Food ☐ Water ☐ EPIRB ☐ Raft/Dinghy ☐

6. Radio

TYPE FREQUENCIES

7. Trip Expectations

DEPARTURE TIME DATE FROM

DESTINATION RETURN DATE NO LATER THAN

8. Automobile:

LICENSE # STATE MAKE

COLOR PARKED AT

9. If not returned by-

Contact the Coast Guard or-

CALL - AT-

AFTER SAILING CHECKLIST

When leaving your Hunter at the dock for more than a short time, it is a good idea to review the following checklist to make sure everything is in order. This will help protect the various parts of your boat and add considerably to their attractiveness and usable life.

- ☐ Flake or furl mainsail and cover, or remove and bag.
- ☐ Remove and stow all portable deck hardware such as snatch blocks, winch handles, etc.
- ☐ Secure the boom to the topping lifts and set it firmly amidships with the main sheet purchase. (It is also a good idea to rig a line from the steering wheel or tiller to a convenience cleat to keep the rudder from swinging back and forth with the motion of the water or employ the wheel brake if so equipped.)
- ☐ Attach the shackle ends of all halyards to convenient fittings and take up slack. Find a location leading away from the mast to keep the halyard from slapping the mast.
- ☐ Coil and stow all lines in line lockers
- ☐ Cover the winches and steering pedestal when leaving the boat for several days or more
- ☐ Close all fuel lines and seacocks
- ☐ Switch off the electrical system
- ☐ Pump out the bilge
- ☐ Check air vents, secure ports and hatches, swab the deck, and clean deck stainless, particularly if you have operated in saltwater.
- ☐ Make a final check of mooring lines, chafing gear, fenders, etc.

SAFE BOATING TIPS

DOCKING

Docking your boat should be handled carefully to avoid potential damage. Under normal wind and water conditions, the following considerations should be made:

1. Whenever possible, your approach should be made against the prevailing wind and current to assist in stopping the boat. Where these conditions are contrary, the strongest should be used to determine approach.

2. Approaching the dock: dock lines should be at ready, loose gear stowed and decks cleared. Determine the direction of the wind and current and when you decide which side of the boat will be against the dock, rig dock lines and fenders on the appropriate side. One dock line should be attached to the bow cleat, another to the stern cleat opposite the side that will lie against the dock. *NOTE: If the boat is to lie against a piling, rig a fender board across two or more pilings.*

3. Tying up: attach bow and stern lines to dock, hauling boat in with fenders against dock. Rig crossing spring lines to limit motion forward and aft. Be sure to allow some slack in all lines to compensate for tidal activity if present. Never use bow rail, stern rail, or stanchions to secure a vessel, even for brief periods. For other types of moorings, or for abnormal wind or water conditions, consult an approved boating guide.

ANCHORING

Your Hunter comes with an on deck anchor well and a Danforth type anchor as standard equipment. The anchor is selected to suit the size and weight of your boat under normal anchoring conditions, and is most effective in muddy or sandy bottoms.

When anchoring, pay particular attention to the scope of your anchor rode (the relationship between of the water and the length of the rode). A good rule of thumb is to allow a scope of about 7:1 (a rode seven times as long as the vertical distance from the bow to the bottom). A helpful aid is to mark the rode every 20 feet or so with knots or other types of indicators. Before dropping anchor, make sure the bitter end is secured to the cleat in the anchor well. Also, be sure to consider wind direction, currents, mean low tide depths and other local conditions when anchoring, as well as positions of any boats already anchored nearby.

To weigh anchor, motor or sail (under main only) forward slowly. When at a point directly above the anchor, a quick tug should free it from the bottom. Take care not to damage the topsides when hauling.

⚠ WARNING

Anchoring in unusual water/ and or weather conditions will require additional precautions. Consult an approved guide for suggestions

SAFE BOATING TIPS

DIESEL ENGINE

An engine owner's manual is supplied with your boat and should be read thoroughly. It contains technical specifications, running instructions and a maintenance schedule on lubricants and fluids. For long engine life, follow routine maintenance schedules.

You should check engine oil, transmission fluid and coolant levels. Water, rust, scale and dirt will cause serious damage to the injectors on diesel engines. You should check your filters frequently and change when necessary. Check fuel line connections for proper tightness.

⚠ WARNING

EXPLOSION/FIRE HAZARD – Fuel system connections that are to loose or to tight can leak, resulting in fuel loss, environmental pollution and explosion/fire hazard.

⚠ DANGER

EXTREME HAZARD: carbon monoxide gas (CO) is colorless, odorless and extremely dangerous. All engines and fuel burning appliances produce CO as exhaust. Direct and prolonged exposure to CO will cause BRAIN DAMAGE or DEATH. Signs of exposure to CO include nausea, dizziness and drowsiness. Refer to BOATING SAFETY for more information.

When you start your engine, run it a minimum of 15 minutes to bring it up to operating temperature. This insures that any condensation is evaporated. Your engine should "run out" at ¾ throttle at least once a month to clean out carbon buildup and moisture.

FUELING YOUR DIESEL ENGINE

⚠ WARNING

EXPLOSION/FIRE HAZARD

- Store flammable material in safety-approved containers. Keep containers in a locker designed by the boat manufacturer for that purpose. Never store flammable material in a non-vented space.
- Observe "No-Smoking" while fueling.
- Run exhaust blower at least 4 minutes before starting engine. Check bilge and engine compartments for fumes.
- Keep ventilation system free of obstructions. Never modify the vent system.
- Fill less than the rated capacity of the tank. Allow for fuel expansion.
- If fuel enters bilge, do not start engine. Determine cause and severity. Contact a knowledgeable marine service to remove fuel. Do not pump overboard. Contact Coast Guard for additional advice (See Environmental Considerations Fuel & Oil Spillage.)
- Inspect fuel system regularly for leaks.

⚠ CAUTION

Follow engine manufacturer's recommendations for types of fuel and oil. Use of improper products can damage the engine and void the warranty.

Notice: Use fresh fuel. Fuel that has been in a tank too long can form gum and varnish, which may affect performance.

Inspect diesel fuel filters regularly. Diesel fuel must be kept as clean as possible. Keep fuel tank full.

SAFE BOATING TIPS

STARTING YOUR DIESEL ENGINE

1. Visually check engine compartment to see that the throttle linkage, shifting controls, electrical connections and fuel lines are properly secured.
2. **Before each start** check oil in engine and transmission.
3. Insure that the engine shut-off cable is properly secured and operating.
4. Place the shift lever in the neutral position. Pull out the button beside the shift lever to disengage the shift. On single lever controls, lift the collar under the shift lever knob and move the lever forward to advance the throttle for neutral warm-up.
5. Insert the starter key and turn to the "on" position.
6. Press the starter button and hold until engine starts, then release. The buzzer and/or light should then go off. **Press the starter button no longer than 5 seconds continuously.**
7. Allow cold engine to warm up a minimum of five minutes.
8. When warm-up is completed, return the hand lever to neutral position, and push the button back to re-engage the shift. The shift is ready for shift and throttle operation.
9. Check that the lube oil pressure warning light and the charge lamp go off. If any of the warning lamps do not go off above 1,000 rpm, the engine is malfunctioning and should be stopped immediately. Consult your nearest engine dealer.

NOTE: The H386 and below are equipped with an "engine stop" pull lever. When pulled all the way out, this will stop the engine at any time.

⚠ CAUTION

Follow engine manufacturer's recommendations for types of fuel and oil. Use of improper products can damage the engine and void the warranty.

MOTORING YOUR DIESEL ENGINE

Before departure, remember to unplug the shore power. When the engine is warm, but prior to releasing the dock lines, move the shift lever to forward and to reverse to insure that it is working properly. To increase RPMs, push throttle lever forward and pull back to decrease RPMs.
IMPORTANT: When sailing, it is best to start the engine before the sails are lowered. This way, it is possible to maneuver if the engine should not start.

⚠ CAUTION

Your rigging will conduct electricity. Always check for overhead high tension wires before proceeding. Once clear, you may increase your speed in a reasonable and safe manner as desired.

ELECTRICAL SYSTEM

If your Hunter is fitted with an electrical system designed for both AC and DC. You can operate any tool, appliance or other device designed to function on regular house current simply by plugging your dockside power cord into a convenient outlet on shore and turning your AC main breaker on.

⚠ WARNING

ELECTROCUTION HAZARD: If polarity is reversed, DO NOT use the shore power source. Immediately turn off the power source and disconnect the shore power cord. Reversed polarity is a dangerous and potentially lethal condition that may cause shock, electrocution, or death.

ELECTRICAL SYSTEM (continued)

To minimize shock hazard, connect and disconnect cable as follows:

1. Turn off the boat's shore power connection before connecting or disconnecting shore power cable.
2. Connect shore power cable at the boat first.
3. If polarity warning indicator is activated, immediately disconnect cable and have the fault corrected by a qualified electrician.
4. Disconnect shore power cable at shore outlet first.
5. Close inlet cover tightly.

DO NOT ALTER SHORE POWER CABLE CONNECTORS.

Storage: Your shore power cable set is intended for use outdoors. To prolong the life of the set, store indoors when not in use.

General: The metallic parts of your cable set are made to resist corrosion. In a salt-water environment, periodically wiping the exposed parts with fresh water, drying and spraying with a moisture repellent can increase life of the product.

A soiled cable can be cleaned with a grease cutting household detergent. A periodic application of vinyl protector to both ends will help to maintain cables original appearance.

In case of salt water immersion, rinse plug end and/or connector end thoroughly in fresh water, shake or blow out excess water and allow to dry. Spray with moisture repellent before re-use.

⚠ WARNING

Do not allow your dockside power cord to come in contact with the water. Never operate any AC power tool or other electrical equipment while you or the device are in contact with the water, as this may cause electrocution resulting in shock or death.

When leaving port, disconnect the dockside power cord and turn the main DC breaker on. This allows you to use the ship's lights and other equipment designed to operate on direct current. Keep in mind that your DC power source is a 12-volt battery, just as with your automobile, and it must be charged regularly by operating the engine (or by running the battery charger, if you have that option installed). Unless a state of charge is maintained, there may not be enough power to operate the starter motor. Dangerous situations can result if the engine cannot be started when needed.

Make a regular visual check of batteries to insure proper water level and inspect terminals for signs of corrosion. If your boat sits for long periods without use, it is often a good idea to remove the batteries and attach them to a trickle charger to keep them fully charged and ready to use.

⚠ WARNING

EXPLOSION/FIRE HAZARD – ensure adequate ventilation of battery to prevent buildup of gases, especially hydrogen.

⚠ WARNING

WHEN CHARGING THE BATTERY:

- Battery electrolyte contains sulfuric acid. Protect your eyes, skin and clothing. In case of contact, flush thoroughly with water and get prompt medical attention, especially if your eyes are affected.
- Batteries generate hydrogen gas that can be highly explosive. Do not smoke or allow flames or sparks near a battery, especially during charging.
- Charge the battery in a fully ventilated place.

SAFE BOATING TIPS

ELECTRICAL SYSTEM (continued)

Hunter Marine recommends that on all boats with either/both a house and start battery, the cables be disconnected during winter storage or any time the boat is out of the water for an extended period of time. Because of the continuous electrical drain placed on the 12 volt system by certain electrical components such as stereos and CO monitors you will be preserving your batteries life expectancies.

We recommend that owners who leave their boats in the water during the sailing season charge the boats internal batteries at least once every seven days during the sailing season (we do not recommend leaving power connected to the boat if it is unattended). Completely depleting a batteries internal charge can drastically shorten its life span. This includes gel cell and glass mat batteries.

For owners who live aboard or wish to leave their boat battery switches in the on position while unattended (again, we do not recommend this) should consider installing a N20504W Nicro Solar vent to reduce the chances of the CO monitor's sounding. Only exchanging the air inside the boat on a regular basis or leaving the battery switches in the off position totally eliminates the false sounding of the monitors while 12-volt systems are operating.

COOKING STOVE

⚠ WARNING

EXPLOSION/FIRE/ASPHYXIATION HAZARD

- Open flame cooking appliances consume oxygen. This can cause asphyxiation or death.
- Maintain open ventilation.
- Liquid fuel may ignite, causing severe burns.
- Use fuel appropriate for type of stove.
- Turn off stove burner before filling.
- Do not use stove for comfort heating.
- Use special care with flames or high temperatures near urethane foam. Once ignited, it burns rapidly, producing extreme heat, releasing hazardous gasses and consuming a large amount of oxygen.

Carefully read and understand the manufacturer's instructions prior to operating your stove. Save the instructions for review, and also to pass on to any subsequent owners.

Use only the fuel recommended by the manufacturer, and store the fuel in an approved container.

Do not smoke while working with fuel.

Immediately clean up any spilled fuel.

SAFE BOATING TIPS

TOILET

IMPORTANT: When not in use, lever must be left in the “dry” position to prevent flooding.

Before using, place the lever in the “wet” position and pump slowly to partly fill and wet the inside of the bowl. Return to the “dry” position.

After using, return the lever to the “wet” position for flushing and pump until the bowl is thoroughly cleaned. Continue with several more full strokes to flush discharge lines. Return lever to “dry” position and pump slowly until bowl is empty.

- There is a possibility of being fined for having an operable direct overboard discharge of waste in some waters. Removing seacock handle, in closed position, or other means must be used to avoid fine.
- It is illegal for any vessel to dump plastic trash anywhere in the ocean or navigable waters of the United States.

⚠ CAUTION

Do not place facial tissue, paper towels or sanitary napkins in head. Such material can damage the waste disposal system and the environment.

OPENING HULL PORTS

If your boat is equipped with opening hull ports, they must remain closed and secured while under sail. Your boat could take on water when it heels, causing damage to the interior due to flooding or even possible sinking of your vessel.

⚠ CAUTION

All hull ports must remain closed and secure while sailing.

PUMPS

All pumps should be checked frequently to insure proper operation. This is an especially important regular maintenance item since a properly operating pump could save your vessel from serious damage.

⚠ CAUTION

Run pump only as long as necessary to remove water. Dry running can damage the pump motor

Inspect all bilge pump hoses for chafing and dry rot. See that all hose clamps are tight. Check that the bilge pump impeller area is clean and free of obstructions. Inspect electrical wiring for corrosion. Ensure that the float switch functions properly.

⚠ WARNING

SINKING HAZARD – Ensure proper bilge pump operation.

SAFE BOATING TIPS

WATER SYSTEM OPERATION

Fill fresh water tank at deck fill. The tank filler cap will be marked “water”. When tank is full, water will back up through the vent hose and exit through a vent located on the side of the hull. Use tank gauge for filling. D.C. main should be turned on first.

To activate the water system, turn on D.C. main, flip the “water pressure” switch on the electrical panel. This will start the pump and pressurize the system. When the pressure builds, the pump will shut off. With continued use of fresh water the pressure in the system is reduced, automatically restarting the pump. Make sure there is water in the system while pump is in operation to prevent damage to the motor. The pump will also run if a leak develops in the system.

NOTE: Intermittent operation of the freshwater pump while all faucets are closed usually indicates a leak somewhere in the lines. Trace the lines to locate the leak and repair.

⚠ CAUTION

Run pump only as long as necessary to remove water. Dry running can damage the pump motor

The water heater operates either on 120 or 240 volts AC or when the engine is running. To obtain hot water from the engine, it must run a minimum of one-half hour.
Pressure water pumps are the demand type. Once the circuit breaker switch is on, opening the faucet will produce water flow.

To operate shower, turn on hot and cold faucets until desired temperature is reached, while the showerhead is retracted at sink. Pull the showerhead out and use. The faucets must be turned off to prevent system drainage.

Opening the faucet will allow the pump to empty the tank. Flushing the tank and lines will be necessary for winterization. Refer to Maintenance & Winterization section for more information.

⚠ WARNING

SINKING HAZARD –To ensure the safety of your vessel, always disconnect shore water and power connections when leaving your boat unattended.

WASTE DISCHARGE

The Hunter is equipped with a head waste holding tank, hose lines, and thru-fittings for either overboard discharge, using the standard equipped hand pump, deck pump out at dockside or Macerator Pump. Tank levels will be indicated on the gauge located below the main electrical panel. Familiarize yourself with the locations of the deck pump out, overboard discharge thur-hull, and vent locations pictured in the Waste Water System section, as well as your local boating regulations concerning the overboard discharge of raw sewage.

ENVIRONMENTAL CONSIDERATIONS

FUEL AND OIL SPILLAGE

The spilling of fuel or oil into our waterways contaminates the environment and is dangerous to wildlife. Never discharge or dispose of fuel or oil into the water. It is dangerous and unlawful. Two common types of accidental discharge are overfilling the fuel tank and pumping contaminated bilge water into the sea.

⚠ WARNING

EXPLOSION/FIRE/POLLUTION HAZARD:
Fill fuel tank to less than rated capacity. Overfill forces fuel out the tank vents, which can cause explosion fire, or environmental pollution. Also allow for fuel expansion

DISCHARGE AND DISPOSAL OF WASTE

Waste means all forms of garbage, plastics, recyclables, food wood, detergents, sewage, and even fish parts in certain waters. We recommend that you bring back everything you take out with you for proper disposal ashore.

Your marine holding tank (if so equipped) must, in many areas, be pumped out by an approved pump-out facility normally found at marinas.

EXHAUST EMISSIONS

Hydrocarbon exhaust emissions pollute our water and air. Keep your engine properly tuned to reduce emissions and improve performance and economy.

ANTI-FOULING PAINTS

The use of anti-fouling paints is common for boats kept in water. Be aware of environmental regulations that may govern your paint choice. These regulations may affect which paint may be used, and also the application or removal. Contact your local boating authorities for more information

⚠ WARNING

EXPLOSION/FIRE/HAZARD:
Ventilate when painting or cleaning. Ingredients may be flammable and/or explosive.

CLEANING CHEMICALS

Cleaning chemicals should be used sparingly and not discharged into waterways. Never mix cleaners and be sure to use plenty of ventilation in enclosed areas. Do not use products that contain phosphates, chlorine, solvents, non-biodegradable or petroleum-based products.

Common households cleaning agents may cause hazardous reactions. Fumes can last for hours, and chemical ingredients can attack people, property and the environment.

INSTRUCTIONS FOR PREPARATION FOR BOTTOM PAINTING

WARNING!

Do not use any sanding, sandblasting or other abrasive reparation of the bottom, as this will void your hull blistering warranty. See the warranty information at the beginning of this manual.

BOTTOM PAINTING

Choose a bottom paint system that suits the environment in your area.
Follow the procedure recommended by the manufacturer of the paint, while making sure not to void the Hunter Hull Blistering Warranty. The procedure for preparing and painting the bottom varies between paint manufacturers, but should always include dewaxing, etching and sometimes priming of the surface.

EPOXY BARRIER COAT

Sanding of the gel coat bottom surface will be permitted should a customer wish to have an epoxy barrier coat applied to the hull, (example Interlux Interprotect 1000, 2000, West System or VCTar). This will not void the Five-Year Blister Warranty.
Hunter Marine refers to epoxy barrier coatings as mentioned above, not epoxy primer paints.
If an epoxy barrier coat is applied to a Hunter vessel, it must be registered with the Warranty Department prior to application of the product. If the dealer applies bottom paint only, sanding ***will not*** be allowed and the no sanding system must be used.

⚠ WARNING

Cleaning agents and paint ingredients may be flammable and/or explosive, or dangerous to inhale. Be sure to use adequate ventilation, and appropriate safety clothing.
(gloves, safety glasses,respiration,etc)

ENGINE, TRANSMISSION & DRIVETRAIN

ENGINE

Follow the fuel and lubrication requirements in the Engine Manual. Check the engine oil level before and after operation and use a quality motor oil (refer to Engine Manual). Be certain the proper amount of oils is in the crankcase at all times

Engine Alignment: the engine should be aligned by experienced marine service personnel. Final alignment should be done after launching, with all normal gear aboard. A description of the procedure follows:

The coupling flanges must come together evenly at all points, a feeler gauge is used to check the gap. If adjustment is necessary, the engine is tilted up or down and/or side-to-side until the flanges meet evenly. Severe vibration will result from misalignment and can cause strut bearing and shaft damage. Alignment should be checked again after several weeks of use. Routine checks of coupling bolts are a must to ensure they are tight.

Shaft Alignment:

1. Separate the coupling, move the shaft end back to clear the pilot in the center.
2. Establish the shaft in the center of the shaft log by raising the shaft until it touches the top of the log – note position – lower the shaft until it touches the bottom of the log – note position – repeat sideways and locate shaft in the center; block shaft in this position, using a block of wood under the shaft packing gland.
3. Now, adjust the engine mounts to allow the pilot on the coupling halves to slip together without moving shaft up down or sideways.
4. Adjust the engine mounts as necessary until a .004" feeler gauge will not enter anywhere along the edge of the flange between the faces.
5. Tighten the locks on the adjustable mounts
6. Recheck coupling with feeler, readjust if necessary.
7. Check stuffing box (allow to drip 3 to 5 drops per minute).

Any questions or problems concerning the engine, please contact the U.S. distributor, Mastery Marine at (727) 522-9471, or your local Yanmar service agent.

TRANSMISSION

Follow the lubrication requirements of the engine manual. The oil level should be checked immediately after operation.

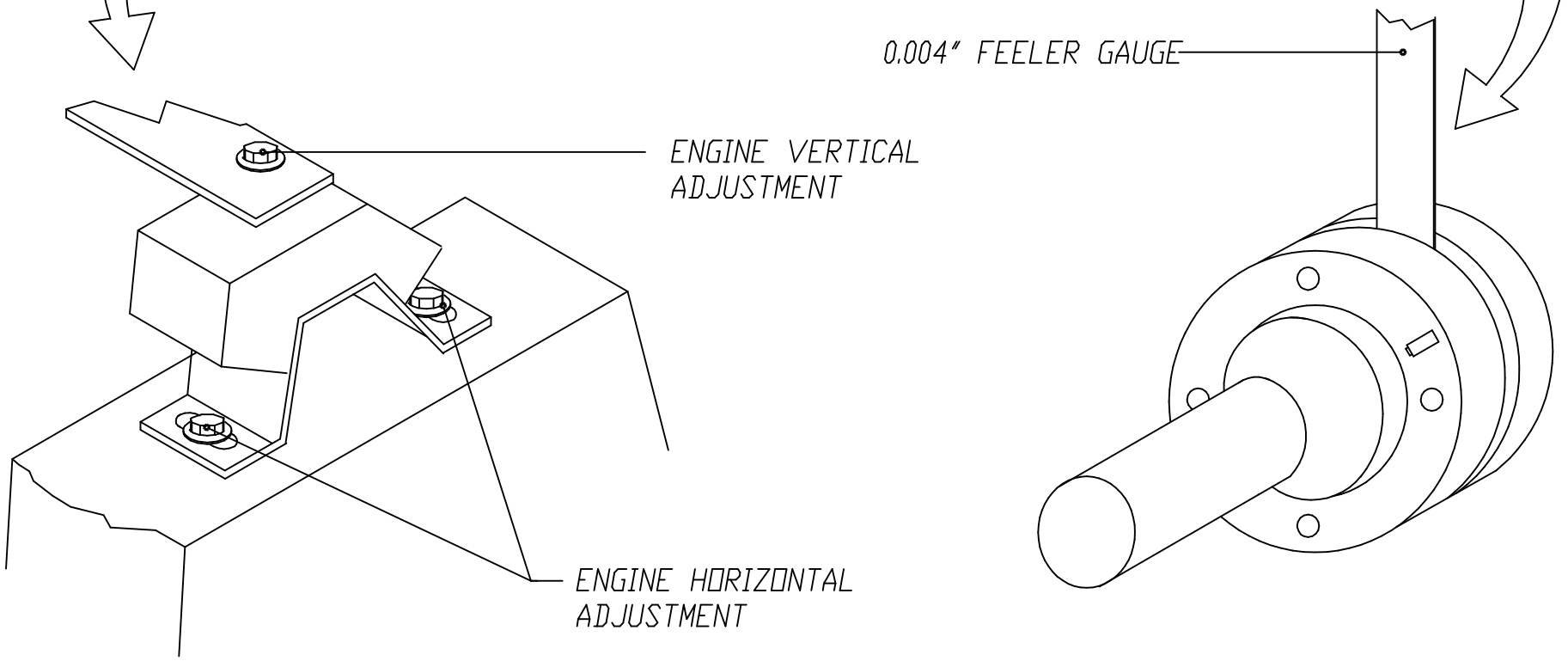
STUFFING BOX

The stuffing box is held to the stern bearing by a rubber hose secured with hose clamps. (See the Shaft and Propeller section). The clamps should be tight and no water should leak from this location. While underway a slight drip from the stuffing box at the shaft exit is necessary (three to five drops a minute) and is normal. To adjust, loosen the locknut, tighten the gland nut one-quarter turn, a retighten the locknut. If excessive water flow persists after adjustment, replace the packing with 3/16" (or 5mm) square flax packing and then adjust as above.

NOTE: Some models use a packless sealing system. Page 56 or Pages 56A, B, C, reflects the type of stuffing box used on this model.

ADJUST THE VERTICAL & HORIZONTAL ENGINE MOUNTS AS NECESSARY TO OBTAIN A MAXIMUM GAP OF 0.004" (.10 MM) BETWEEN THE COUPLING FLANGE FACES. USE A 0.004" FEELER GAUGE ALL THE WAY AROUND THE COUPLING TO ESTABLISH THE CORRECT TOLERANCE.

CHECK FOR THE COUPLING GAP WITHOUT THE COUPLING BOLTS IN PLACE.



DRAWING TITLE: STANDARD ALIGNMENT DIAGRAM FOR INBOARD ENGINES	
DRAWING NO. 3808024	REVISION NO. NONE
DRAWN BY: ENGINEERING DEPT.	DATE: 10/22/98

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HUNTER

MAINTENANCE

COMPASSES

A boat compass rarely exists in an environment that is completely free from magnetic materials or influences.

The compass on your boat should be adjusted by a certified compass adjuster and have a deviation table made for it.

If you must depend solely on your compass for navigation, make a quick check for any objects near the compass that may cause additional, unmeasured deviation. Typical objects that may fall in this category include: knives, small radios, flashlights or other tools.

STEERING

Refer to the manufacturer's instruction for maintaining pedestal steering system. Routinely inspect steering system components.

⚠ WARNING

CONTROL HAZARD – Inspect and maintain steering system regularly. An improperly maintained system may fail, causing sudden loss of steering control, resulting in personal injury and property damage.

ELECTRICAL SYSTEMS

The electrical system is a 12-volt, negative ground installation, plus an optional shore power system of either 120v or 220v. The owner should inspect batteries, terminals and cables weekly for signs of corrosion, cracks, and electrolyte leakage. Battery terminals are to be kept clean and greased. Refer to separate instructions on batteries, wiring diagram, and electronics.

⚠ WARNING

SHOCK/FIRE HAZARD
Replace breaker or fuse with the same amperage device. Never alter over current protection.

⚠ WARNING

SHOCK/FIRE HAZARD

- Disconnect electrical system from its power source before performing maintenance. Never work on the electrical system while it is energized.
- Electrical appliances must be within the rated amperage of the boats circuits.
- Observe boat carefully while the electrical components that can be left unattended are the automatic bilge pump, fire protection and alarm circuits.
- Only a qualified marine electrical technician may service the boat's electrical system.

⚠ CAUTION

- Turn off engine before inspecting or servicing battery.
- Disconnect battery cables before working on electrical system to prevent arcing or damage to alternator.

MAINTENANCE

PLUMBING SYSTEMS

All pumps should be checked frequently to insure proper operation. This is an especially important regular maintenance item since proper functioning of a pump could save your vessel from serious damage in the future.

Inspect all hoses for chafing and deterioration. See that hose clamps are tight. Check that the pump impeller area is clean and free of obstructions.

Inspect electrical wiring for corrosion. Make sure float switches move freely and are making an electrical connection.

The owner should become familiar with the layout of the water and waste systems by walking through the boat with the diagrams provided in this manual. It is especially important that the owner knows all the thru-hull valve locations and inspects for leaks frequently. Refer to plumbing diagrams in Specifications and Technical section of this manual.

General Thru-hull Lists (varies from boat to boat---see diagrams in Systems and Circuits section).

1) Engine cooling system
2) Galley sink
3) Head sink
4) Head toilet (water intake)
5) Holding tank discharge
6) Scupper drains

FUEL SYSTEMS

The owner should inspect the condition of fuel lines for cracks or leaks. A primary source of fuel-related problems is water in the system. The owner should use only well maintained fueling facilities and make sure fuel fill caps are tightly secured after filling. Check and maintain fuel filters periodically. Refer to your Engine Manual for additional information. Periodically, add biocide to prevent bacteria and fungi from contaminating diesel fuel that may contain some water. Carefully follow manufacturer's instructions and clean filter regularly.

MAINTENANCE

CLEANING FIBERGLASS SURFACES

Fiberglass surfaces should be cleaned regularly. Normal accumulations of surface dirt can be removed simply by occasional rinsings with water. If you operate your boat in salt water, more frequent rinsing will be required. To remove stubborn dirt, grease or oil, use a mild detergent and a soft brush. Rinse with fresh clean water. Avoid the plexiglass companionway slider, windshield, deck hatches and fixed ports when using a deck brush, since these surfaces can scratch.

It is a good idea to wax the fiberglass once or twice a year to maintain a deep, glossy appearance. Your local marine supply should be able to provide an appropriate wax.

⚠ WARNING

EXPLOSION/FIRE HAZARD

Cleaning agents and paint ingredients may be flammable and/or explosive, and dangerous to inhale. Be sure to use adequate ventilation, and appropriate safety clothing (gloves, safety glasses, respirator, etc.)

CLEANING ACRYLIC

Use only mild soap and water to clean acrylics. Do not use products containing solvents such as ammonia, which is found in many window cleaners.

⚠ CAUTION

Use care when cleaning acrylic. Dry cloth and many glass cleaners will scratch. Solvents will attack the surface.

SAIL CARE

Sunlight is a sail's worst enemy, so **cover the mainsail when not in use.** An ultraviolet guard, fitted down the leech of a roller headsail will protect the exposed part from the weathering effect of the sun and from dirt and grit.

Mildew, can be prevented by storing sails dry and by hand washing twice a season. Check all sails regularly for chafe, particularly where they chafe on deck fittings or rigging, at reef points, batten sleeves and the foot of the headsail. Sail batten pockets should be inspected on a regular basis.

To stow the mainsail, start at the leech and flake it onto the boom, left and right, in about 18-in. (46 cm) folds, while pulling the leech aft. Secure with a sail tie and continue to the luff. Lash to the boom with sail ties or shock cord.

GENERAL HARDWARE MAINTENANCE

Check all fittings regularly to be sure screws are tight. Occasionally lubricate (use silicone lubricants) all moving parts on such fittings as blocks, turnbuckles and cam cleats, as well as the locking pins of snatch blocks, track slides, spinnaker poles, etc. Inspect cleat and fairleads for roughness and smooth with fine-grained emery paper if necessary. Also, replace any missing or damaged cotter pins in turnbuckles and shackles, and either tape them or use them or use protective covers manufactured for that purpose. Grease winches a minimum of once yearly.

WINCH MAINTENANCE

Follow the maintenance instructions prescribed by winch manufacturer. We recommend a minimum of an annual cleaning and light greasing.

VINYL CARE

These patterns, like all upholstery fabrics and vinyl, require a regularly scheduled cleaning program. A thorough cleaning should be administered on a daily, weekly or monthly basis depending on use and exposure to dirt and/or staining agents. It is important to begin treatment of a stain as soon as possible after a spill. It is important that efforts begin immediately after a spill to remove any potential staining agent. It is advisable to clean these products as soon as the first signs of dinginess occur, otherwise, delaying clean up will require a much greater effort to restore the product to its original appearance.

Regular cleaning requires the use of a mild cleaner such as Murphy's Oil soap and water. In situations where the vinyl has not been washed regularly and there is a build up of dirt, stronger vinyl cleaners such as Simonize's Tuff Stuff or Turtle Wax's vinyl/fabric cleaner are recommended. We do not recommended the use of any other cleaners. The use of cleaners other than those recommended may result in irreparable damage to the product.

In order for the above listed cleaning solutions to work effectively on stubborn stains, please allow time for the cleaning solution to soak in thoroughly. Be sure to remove the cleaning solution before it has time to dry. Regardless of the type of cleaner used, it is necessary to finish up with a thorough rinse using fresh water on a clean sponge or rag. A soft bristled nylon or natural fiber brush can be used to remove built-up dirt and staining agents.

Finally, please remember that all our fabric grain vinyls require a greater cleaning effort to maintain than comparable smooth grain vinyls. These products will provide an attractive and durable alternative to conventional fabrics and vinyls if properly maintained. One must realize that the proper installation and use of our fabric grain vinyls require additional attention to the establishment and maintenance of a well thought out cleaning program.

⚠ CAUTION

Do not use acetone or other harsh cleaners on the vinyl soft headliner. Use soapy water or other mild detergent to avoid damage to the vinyl.

FABRIC CARE

Vinyl: Clean with mild soap and water. Wipe with vinyl or upholstery cleaner monthly, and especially before and after storage.

Leather: Mild soap water. Blot dry. Do not scrub as this will stretch and scratch. Wipe with leather cleaner/oil to preserve and help prevent cracks before and after storage.

Fabric: Blot dry. Do not machine wash. Use only mild soap and water. Wipe with a clean white cloth. If stain persists, dry clean. Be sure to treat cleaned surfaces with scotch guard. Stretched or loose covers may be steam cleaned. If foam is removed, it will restuff more easily if wrapped with thin plastic.

Storage: Cover with airflow fabric to reduce dust build up. Do not use plastic, as this will cause cushions to sweat and mildew.

Cushions: If wet, prop cushions vertically to promote airflow around each cushion. Cushions can be cleaned by most dry cleaners. **Dry clean only.**

REPAIR OF POLTURETHANE (MINWAX) FLOORS

Surface Scratches: Sand floor with 220 grit sandpaper. Remove all dust with clean cotton cloth or blow off with air. Apply one coat of minwax evenly over sanded floor. Let dry completely, at least 24 hours

Deep Scratches: Remove all blemishes by sanding floor with 220, until all minwax is removed and you have a raw floor. Remove all dust with clean cloth or blow off with air. Apply one coat evenly over floor. Let dry four to six hours. Repeat steps one and four. Apply third coat of minwax only if needed by repeating steps one and four.) After final coat, let floor dry completely at least one day.

ELECTROLYSIS AND GALVANIC PROTECTION

Salt water allows electric current to flow from anodic to cathodic material. For any two metals from two components, their relative positions in the galvanic rating table, will determine which loses material (the anode) and which remains largely undisturbed (the cathode). The distance between the two metals on the galvanic table determines the rate of wear. Thus a sacrificial zinc anode is often fitted to the underwater area of a boat to attract any destructive currents away from bronze or steel propeller shafts, for example. It is not enough to know that your boat does not suffer from electrolysis; a newcomer in the adjacent marina berth may start a too-friendly association with metal components on it. An easy place to fit an anode is on the propeller shaft, or covering the propeller nut. The anode should not be painted; this would render it ineffective.

To prevent electrolysis in seawater, the difference between the voltages of the two adjacent metals should not exceed 0.20 V. For example, zinc and carbon steel used together risk corrosion, while lead and active stainless steel are compatible. Metals with a high voltage corrode faster and need a larger area to diffuse the electrochemical reaction.

TEAK CARE (240,260,and 270 ONLY)

Teak wood is a high quality, extremely durable wood with high oil content. In order to help you protect the original beauty of your teak interior, we have sealed the wood with a 3 to 4 coat system of high quality Seafin Teak Oil, manufactured by Dalys. This material is penetrating oil that dries to a low sheen to seal and protect the wood from moisture and weathering. It creates a durable, nonslip surface to repel water and resist wear. It won't chip, peel or blister. It reduces work and maintenance cost because it is easy to repair and maintain and repair. With proper maintenance it will outlive urethane varnish on interior and even exterior surfaces

MAINTENENCE

When oiled surfaces require renewing, simply wipe the surface area free of loose dirt, dust or other contaminants. Dampen a cloth with the Seafin Teal Oil and wipe on. Let stand for 5-15 minutes, then polish dry. If your dinette table has an epoxy finish, clean with furniture polish

REPAIRS

When woodwork is damaged from scrapes or abrasions that go into or thru the finish, take the following steps:

1. Take 180 to 200 grit wet/dry sand paper to smooth out rough spots.
2. Wipe clean of dust and dirt with a clean rag. Note: before applying oil, wood surface must be dry.
3. Wipe or brush on oil, allow to penetrate 5-15 minutes while surface is still wet.
4. Sand until smooth with 400A wet/dry sandpaper.
5. Wipe dry with a clean rag. Allow 8-12 hours drying time.
6. Apply second coat, sand, and repeat procedure.

This procedure may be repeated as many times as needed to bring damaged area back to its original finish. If you have trouble with getting the same sheen, you may use a soaked and wrung out cloth to apply a very light coat to get an even sheen.

For more information about the product contact:

Dalys
3525 Stoneway North
Seattle, WA 98103
(206) 633-4200

TEAK CARE

INTERIOR FURNITURE & BULKHEAD SPRAY FINISH

Teak wood is a high quality, extremely durable wood with a high oil content. In order to help you protect the original beauty of your teak, we have sealed the interior with a (3 to 4) spray coat finish, using sealer and varnish for marine cabinets. The materials are manufactured by "Chemcraft International Inc". This material will seal and protect the wood from moisture and weathering. It is easy to maintain and reduces work and maintenance costs.

REPAIRS

When woodwork is damaged from scrapes or abrasions (that go into or through the finish), take the following steps:

1) Sanding with the grain, take 320 grit sand paper to smooth out rough spots. If the spot is down to the raw wood, rag (100% cotton) wipe the spot with acetone and allow to dry. (Note: acetone only needs to be applied to the raw teak).
2) Reseal raw wood with Mohawk Spray Sealer (aerosol can) and allow to dry.
3) Lightly sand with 320 grit, sanding larger than original spot.
4) Wipe clean of dust and dirt with a clean rag.
5) Using Mohawk touch up and repair supplies, use clear lacquer spray (aerosol can). Apply (1) coat on the spot evenly and allow to dry.
6) This process (steps 3 – 5) may be repeated as many times needed to bring damaged area back up to its original finish. On your final spraying, be sure to feather into existing finish.

SOP FOR POLYURETHANE (MINWAX) FLOORS

SURFACE SCRATCHES

1) Sand floor with 220 grit sandpaper until all scratches are removed.
2) Remove all dust with a clean cotton cloth or blow off with an air gun, then wipe down with a tack cloth.
3) Apply one coat of minwax evenly over the sanded area.
4) Let the minwax dry completely (at least one day)

DEEP SCRATCHES

1) Sand floor with 220 grit sandpaper until all the minwax is removed and down to raw wood, removing all blemishes.
2) Remove all dust with a clean cotton cloth or blow off with an air gun then wipe down with a tack cloth.
3) Apply one coat of minwax evenly over the floor.
4) Let minwax dry 4-6 hours
5) Repeat steps 1-4, light sand
6) Apply a 3rd coat if needed by repeating steps 1-4.
7) Let the minwax dry completely (at least one day)

Chemcraft International U.S. Watts: 1-800-545-0047
Telephone: 910-723-1846
U.S. Watts: 1-800-334-8556
Mohawk Finishing Products, Inc.

STORAGE/WINTERIZATION

IMPORTANT

Winter storage is recommended to be done in one of the following three ways, either: 1) by blocking the boat via a cradle 2) with chained stands on level ground; or 3) by storing the boat in the water with a bubbler system to prevent icing. Damage to your boat, including engine misalignment caused *by twisting, is not covered by the warranty*.

SAILS

Sails should be properly folded and stowed in a dry, well-ventilated place. Many sailboat owners send their sails back to the sail manufacturer at the end of each season. The sailmaker will check the stitching and sailcloth for wear and store the sails until the start of the next season.

ELECTRICAL

Remove battery from boat (Refer to Engine Manual) and charge. It is a good idea to also remove the electronics (radio, radar, etc) and store in a safe place**.**

CUSHIONS

Cushions should be removed and stored at home if possible. If not, prop them vertically to promote air flow around each cushion. *Dry clean only!*

HATCHES

Tenting the deck during storage will help prevent ice from forming and damaging hatches and deck fittings. The installation of a passive vent will help with ventilation while the boat is in storage.

WATER SYSTEM

Open a faucet and allow the pump to empty the tank. Then add approximately two gallons (7.6L) of non-toxic antifreeze solution to the tank and repeat the pumping out procedure.

A second method is to disconnect the hoses at the pump, allowing them to drain. Find the lowest point in the system and disconnect the fitting. Open all faucets to allow the lines to drain. If possible, use a short section of hose on the faucet to blow through the lines to clear all water. A diluted solution with baking soda will help freshen the system.

WATER SYSTEM

Open valve and drain fully leave valve open during lay-up time.

TOILET AND HOLDING TANK

Drain and flush toilet. Using non toxic antifreeze in a 50/50 mixture with water, pump through toilet and into holding tank.

OUTBOARD ENGINE

Take it home and store it in a safe place. Be very careful storing the gas tank as the gasoline is very flammable. Refer to Engine Manual for specific maintenance schedule.

INBOARD ENGINE

Winterizing Fresh Water Cooled Diesel Engines

1. Drain crankcase and transmission and refill with fresh lubricant as specified in Engine Manual.
2. Drain and clean all fuel filters and change elements, gaskets, and seals. Bleed all air from fuel systems.
3. Start engine and bring up to operating temperature.
4. Close the sea cock, remove the raw water pickup hose from the raw water pump and immerse one end into a 5-gallon (19L) bucket of antifreeze solution. Start engine and run

until antifreeze solution comes out exhaust stack or until bucket is empty. Attach the raw water pickup hose to the raw water pump. Tighten all clamps. **NOTE: This procedure bypasses the sea strainer to prevent antifreeze from crystallizing in sea strainer, which warranty will not cover.**

5. Loosen water pump and alternator belts to lessen tension on belts during winter.

6. For engines equipped with a hand crank: pull compression release levers and turn engine slowly with the hand crank. Slowly pour about 2 ounces of engine oil into the intake pipe or manifold while hand cranking the engine. This will allow for a thin coat of oil on the valves and upper cylinder. **DO NOT USE** starter to turn engine or serious engine damage may result.

7. Tape the openings of the intake and exhaust manifolds with duct tape to help prevent corrosion of the upper cylinder during layup.

8. Scrape all rust or corrosion from exposed metal parts and surfaces. Scrub all metal surfaces with detergent and rinse thoroughly. Paint any bare metal.

9. Place a dust cover over engine. Do not leave the engine exposed to rain and sea breeze.

10. Disconnect the battery cables; remove the battery from the boat. Clean the terminal ends and battery with a solution of baking soda and water, and then rinse thoroughly with clean water. Apply a light coat of grease on the terminal end of the battery and cables. Store the battery in a cool dry place. Use a trickle charger to keep battery charged. Do not charge battery near any open flame or a confined area.

CAUTION: Wear safety goggles and rubber gloves to protect your skin.

Winterizing Raw Water Cooled Diesel Engines

1. Drain crankcase and transmission and refill with fresh oil as specified in the engine manual. Change oil filters.

2. Close seacock, remove raw water pickup hose from water pump, attach 4-foot (1.2m) length of hose to water pump and immerse in a 5 gallon(19L) bucket of anti freeze solution. Remove hose from engine or manifold that leads to exhaust elbow. Attach about a 4-foot length of hose and immerse one end in the bucket of antifreeze solution. Start engine and run until water begins to warm up (about 3-5 min.) and the thermostat opens. Stop engine. Replace hose that leads to exhaust elbow. Star engine and let run till water comes out exhaust pipe. Stop engine, remove hose from water pump to bucket, attach hose from seacock to water pump and tighten all hose clamps. **NOTE: this procedure bypasses the sea strainer to prevent antifreeze from crystallizing sea strainer, which warranty will not cover.**

3. Loosen water pump and alternator to lessen tensions on belts during winter.

4. Drain and clean all fuel filters and change elements, gaskets and seals. Bleed all air from fuel systems.

5.Pull compression release lever and turn engine slowly with hand crank. Slowly pour about 2 ounces of

engine oil into the intake pipe or manifold while engine is turning.
DO NOT USE the starter to turn engine or serious engine damage may result.
6. Tape the openings of the intake and exhaust manifolds with duct tape to help prevent corrosion of the upper cylinder during lay-up.
7. Scrape all rust or corrosion from exposed metal parts and surfaces.
Scrub all metal surfaces with detergent and rinse thoroughly. Paint any bare metal.
8. Place a dust cover over engine. Do not leave engine exposed to rain and sea breeze.
9. Disconnect the battery cables; remove the battery from the boat.
Clean the terminal ends and battery with a solution of baking soda and water and rinse thoroughly with clean water. Apply a light coat of grease on the terminal end of the battery and cables. Store the battery in a cool dry place. Use a trickle charger to keep battery charged. Do not charge battery near any open flame or in a confined area.
CAUTION: Wear safety goggles and rubber gloves to protect your eyes and skin.

DEPARTURE FROM THE BOAT
The check list for leaving a boat unattended is very important because items overlooked often will not be remembered until you are far from the boat and corrective actions are impractical or impossible.
Primary choices for this list are items relating to the safety and security of the unattended craft: turning off fuel valves, properly setting electrical switches, pumping out bilge and leaving the switch on automatic (or arrange for periodic pumping out). **It is recommended that the power be turned off when leaving the boat.** Other departure checklist items are securing ports, windows, hatches and doors.

ROUTINE MAINTENANCE
Routine maintenance checklists should include items based on how much the boat is used (usually in terms of engine hours) and on calendar dates (weekly, monthly or seasonal checks). Typical of the former are oil level checks and changes, and oil and fuel filter changes.
On a calendar basis the lists should note such matters as electrolyte levels in storage batteries, pressure gauges on dry chemical fire extinguishers, and all navigation lights. Check the operation of automatic bilge alarms or pump switches by running water into the boat. Periodically close and open
sea cocks several times to ensure their free and easy operation in case they are needed in an emergency. Equipment and supplies carried on board for emergencies should be inspected for any signs of deterioration.

CE CERTIFIED

Your Hunter has been manufactured in the United States and has been certified by the IMCI to be in compliance with the relevant parts of the Recreational Craft Directive 94/25/EC from the European Parliament. The CE mark means your craft meets or exceeds the applicable current International Organization for Standardization (ISO) standards and directives as stated on the CE certificate supplied with your craft. The builder's plate, affixed to your boat, describes various parameters involved in the design of your boat. Please refer to it regularly when operating your boat.

Following are the Design Categories, established by the Recreation Craft Directive, which is to be considered a guideline of use application as per the Directive's criteria. Hunter Marine Corporation does NOT establish these criteria, and the category indicated is only a reference to the assigned category. The safety of the captain and crew of any vessel is not measurable by such categories, and you should not interpret these categories as an indication of your safety in such condition. The skill of your captain and crew, together with proper preparation, appropriate safety equipment for the given conditions and a well maintained vessel are critical to safe sailing.

CE CRAFT DESIGN CATEGORIES

Category A – "Ocean": Craft designed for extended voyages where conditions may exceed wind force 8 (Beaufort Scale) and include significant wave heights of 4m, for vessels that are largely self-sufficient.

Category B - "Offshore": Craft designed for offshore voyages where conditions include winds up to and including wind force 8 and significant wave heights up to and including 4m may be experienced.

Category C – "Inshore": Craft designed for voyages in coastal waters, large bays, estuaries, lakes and rivers, where conditions up to and including wind force 6 and significant wave heights up to and including 4m may be experienced.

Category D – "Sheltered Waves": Craft designed for voyages on small lakes, rivers and canals, where conditions up to and including wind force 4 and significant wave heights up to and including 0.5m may be experienced.

For additional information, contact

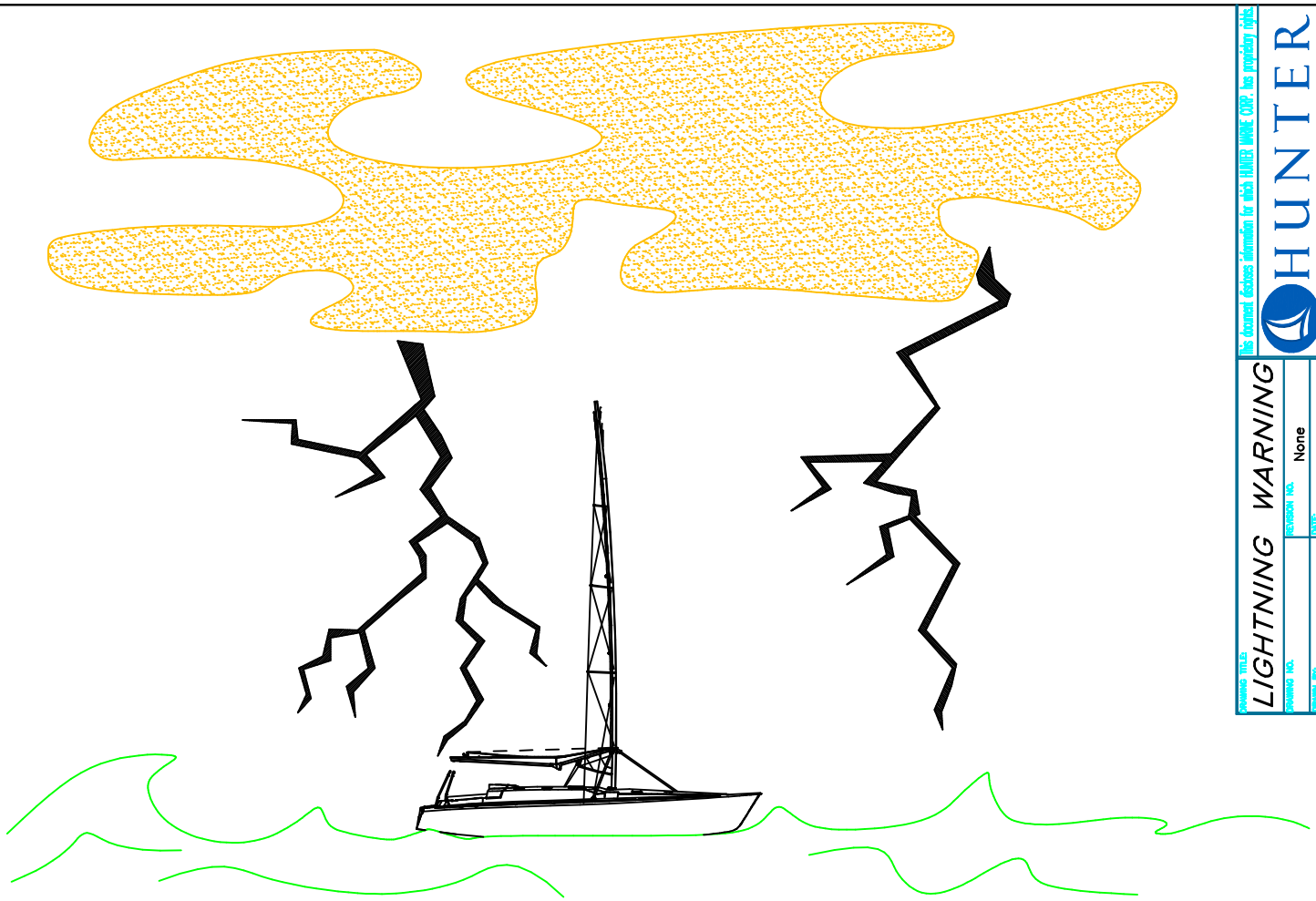
International Marine Certification Institute (IMCI)
Treves Centre, rue de Treves 45
1040 Brussels, Belgium
FX: (32) 2238-7700

NMMA CERTIFIED

Your Hunter has been judged by the National Marine Manufacturers Association (NMMA) to be in compliance with the applicable federal regulations and American Boat and Yacht Council (ABYC) standard and recommended practices in effect at the time of manufacture.

For additional information, contact:

National Marine Manufacturers Association
200 E. Randolph Dr., Suite 5100
Chicago, IL 60611
PH: (1) 312-946-6200 FX: (1) 312-946-0388



DRAWING TITLE: LIGHTNING WARNING
DRAWING NO.
REVISION NO. None
DATE: 07/11/02
DRAWN BY: ENG

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HUNTER

LIGHTNING STORM WARNING:

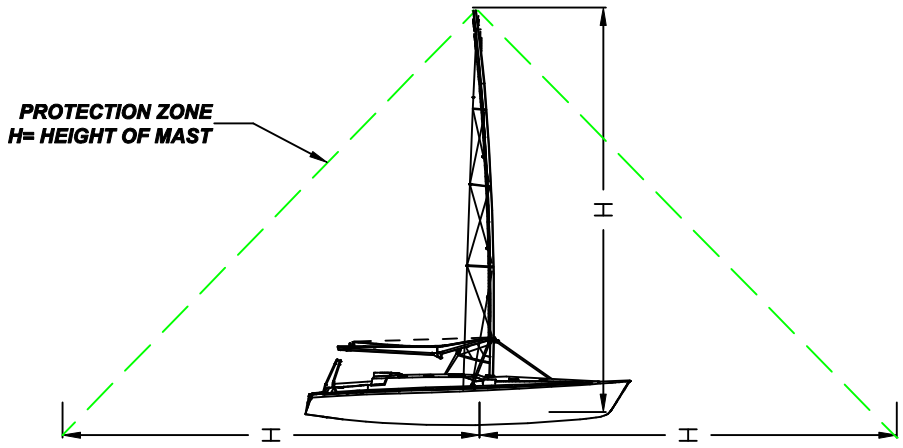
1. ALL WHIP ANTENNAS SHOULD BE TIED DURING STORM, UNLESS PART OF THE LIGHTNING PROTECTION SYSTEM.

2. PRECAUTIONS: DURING LIGHTNING STORMS: A. THE SHIPS OCCUPANTS SHOULD TAKE SHELTER INSIDE A CLOSED AREA OF THE BOAT. EXAMPLE: BELOW DECK. B. OCCUPANTS SHOULD NOT HAVE ANY BODY PARTS IN THE WATER. C. AVOID CONTACT WITH ANY COMPONENTS OF THE L.P.S. AND D. AVOID ALL CONTACT WITH ANY METAL OBJECTS.

3. SEE DIAGRAM BELOW FOR INFORMATION ON THE LIGHTNING PROTECTION ZONE.

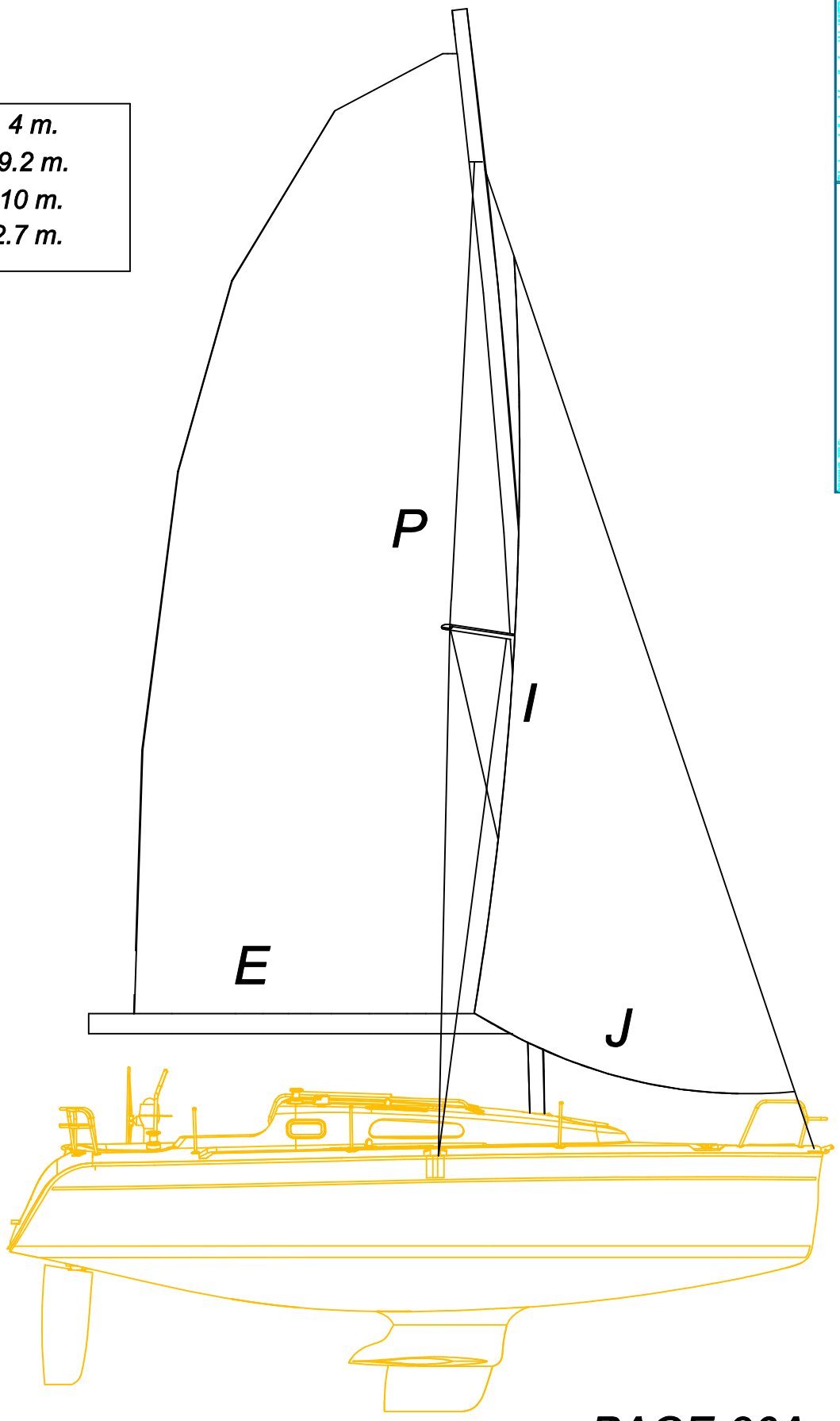
4. IF LIGHTNING SHOULD STRIKE THE SHIP, INSPECT ALL ELECTRONICS, ELECTRIC GEAR, COMPASS AND L.P.S. SYSTEM FOR POSSIBLE DAMAGE. RECALIBRATE AS NECESSARY. NOTE: BEGIN CHECKING ELECTRONICS AFTER THE THREAT OF LIGHTNING HAS PASSED.

FAILURE TO FOLLOW PRECAUTIONS MAY RESULT IN SEVERE INJURY OR DEATH



H27 STANDARD SAILPLAN

E	13'-01"	4 m.
P	30' 03"	9.2 m.
I	32' 10"	10 m.
J	8' 11"	2.7 m.



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DRAWING TITLE: SAILPLAN (STANDARD)

DRAWING NO. 278036A

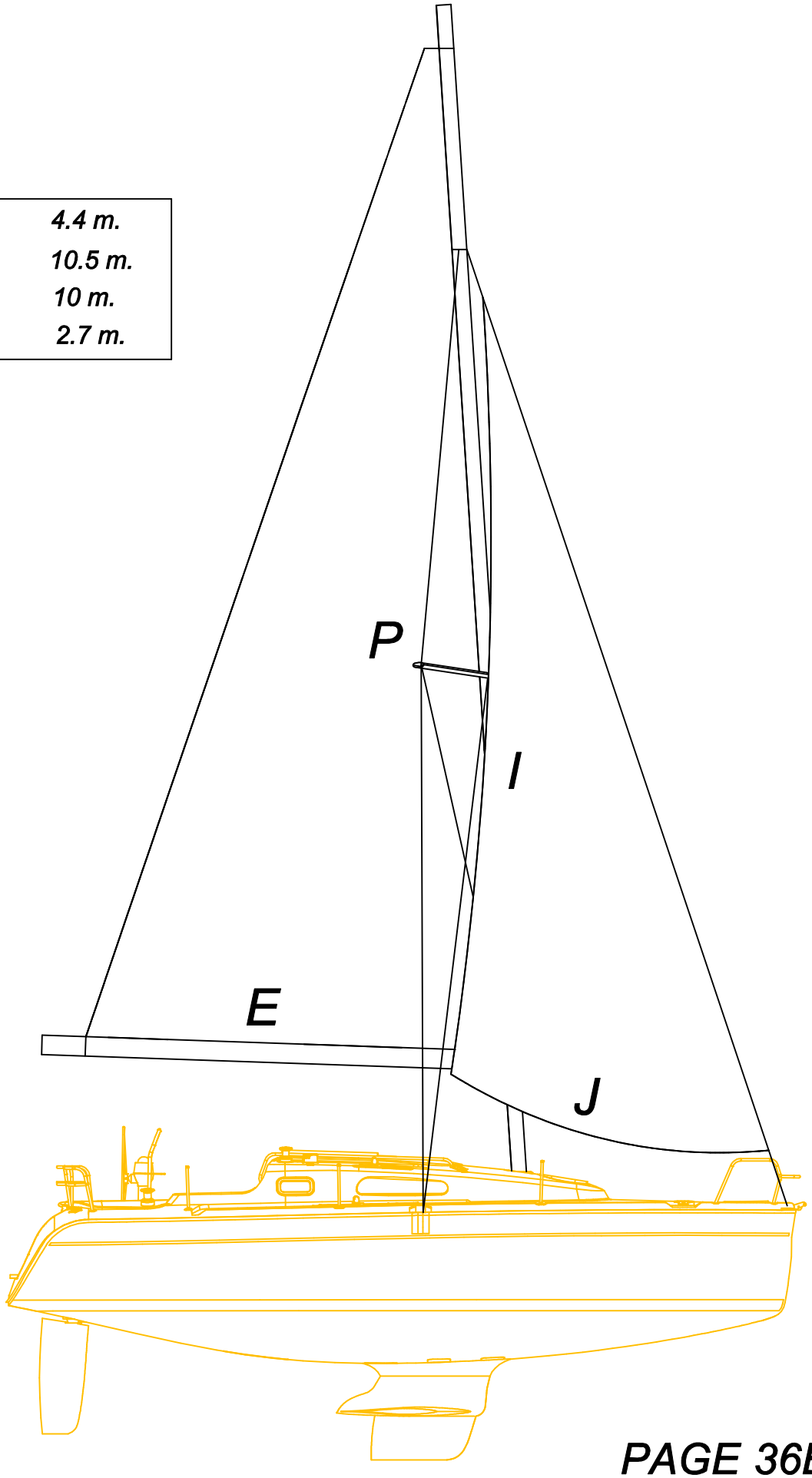
REVISION NO. None

DRAWN BY: ENG

DATE: 05/15/04

H27 FURLING SAILPLAN

E	14' 04"	4.4 m.
P	34' 5"	10.5 m.
I	32' 10"	10 m.
J	8' 11"	2.7 m.



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HUNTER

DRAWING TITLE: SAILPLAN (FURLING)

DRAWING NO. 278036B

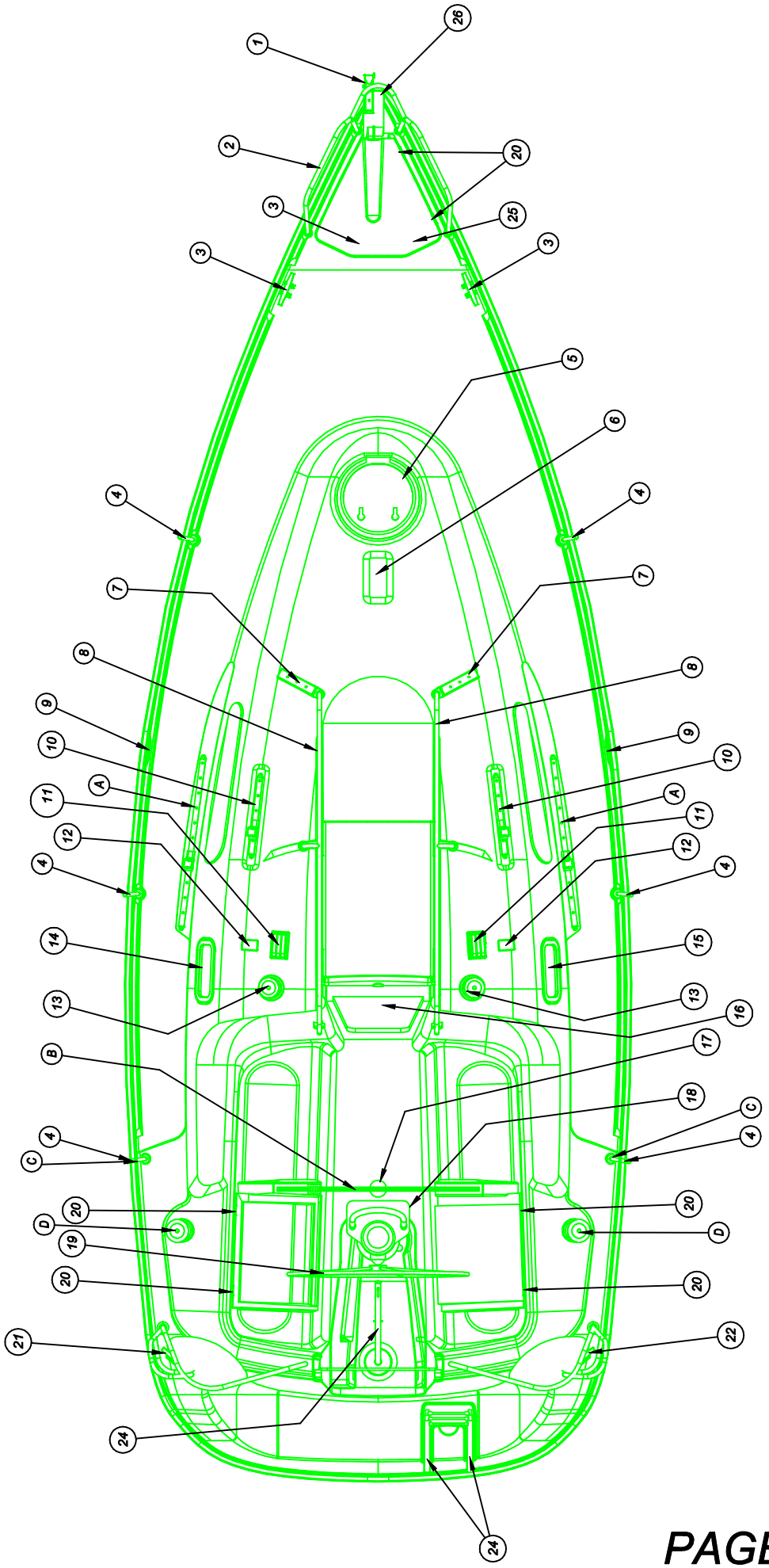
REVISION NO. None

DRAWN BY: ENG

DATE: 05/15/04

H27 DIMENSIONS, CAPACITIES, ETC.

HULL LENGTH	27' 00"	8.23 m.
LENGTH OVERALL (INCUDES BOW ROLLER)	27' 04"	8.33 m.
LENGTH OF WATERLINE (LWL)	23' 07"	7.18 m.
BEAM (MAX)(without rubrail)	9' 08"	2.95 m.
BEAM (MAX)(with rubrail)	9' 11"	3.02 m.
DRAFT		
* SHOAL	3' 06"	1.05 m.
* DEEP	5' 00"	1.52 m.
DISPLACEMENT (LIGHTSHIP)		
* SHOAL	7656 lbs.	3473 kg.
* DEEP	7505 lbs.	3404 kg.
* BILGE	8182 lbs.	3711 kg.
BALLAST (LEAD KEEL)		
* SHOAL	2052 lbs.	931 kg.
* DEEP	1901 lbs.	862 kg.
* BILGE	2578 lbs.	1169 kg.
MAST HEIGHT (FROM WATERLINE)		
* STANDARD	39' 09"	12.12 m.
* FURLING	43' 08"	13.31 m.
* PERFORMANCE	40' 10"	12.45 m.
SAIL AREA (ACTUAL)		
* STANDARD	386 sq. ft.	36 sq. m.
* FURLING	369 sq. ft.	34 sq. m.
SAIL AREA / DISPLACEMENT		
* STANDARD/ACTUAL	ratio 14	
* FURLING/ACTUAL	ratio 13.6	
* STANDARD/TRIANGLE	ratio 11	
* FURLING/TRIANGLE	ratio 13.5	
DISPLACEMENT LENGTH	ratio 261	
I	27' 00"	8.24 m.
J	8' 11"	2.72 m.
P		
* STANDARD	30' 04"	9.25 m.
* FURLING	34' 05"	10.49 m.
E		
* STANDARD	11' 08"	3.55 m.
* FURLING	14' 04"	4.37 m.
STANDARD CABIN	Sleeps 4	
HEADROOM		
STANDARD DECK	6' 2"	1.9 m.
FUEL TANK CAPACITY	15 US gal.	57 liters
WATER CAPACITY	20 US gal.	76 liters
WATER HEATER	6 US gal./OPTION	23 liters
HOLDING TANK CAPACITY	10 US gal./OPTION	38 liters
BATTERY CAPACITY(BASE BOAT)	85 amps	85 amps
INBOARD ENGINE	14 hp.	10.4 kw.
LIFTING POINTS	INDICATED BY "SLING" LABELS ON HULL	



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DRAWING TITLE: DECK HARDWARE LAYOUT

DRAWING NO. 278038 | REVISION NO. None

DRAWN BY: ENG | DATE: 06/15/04

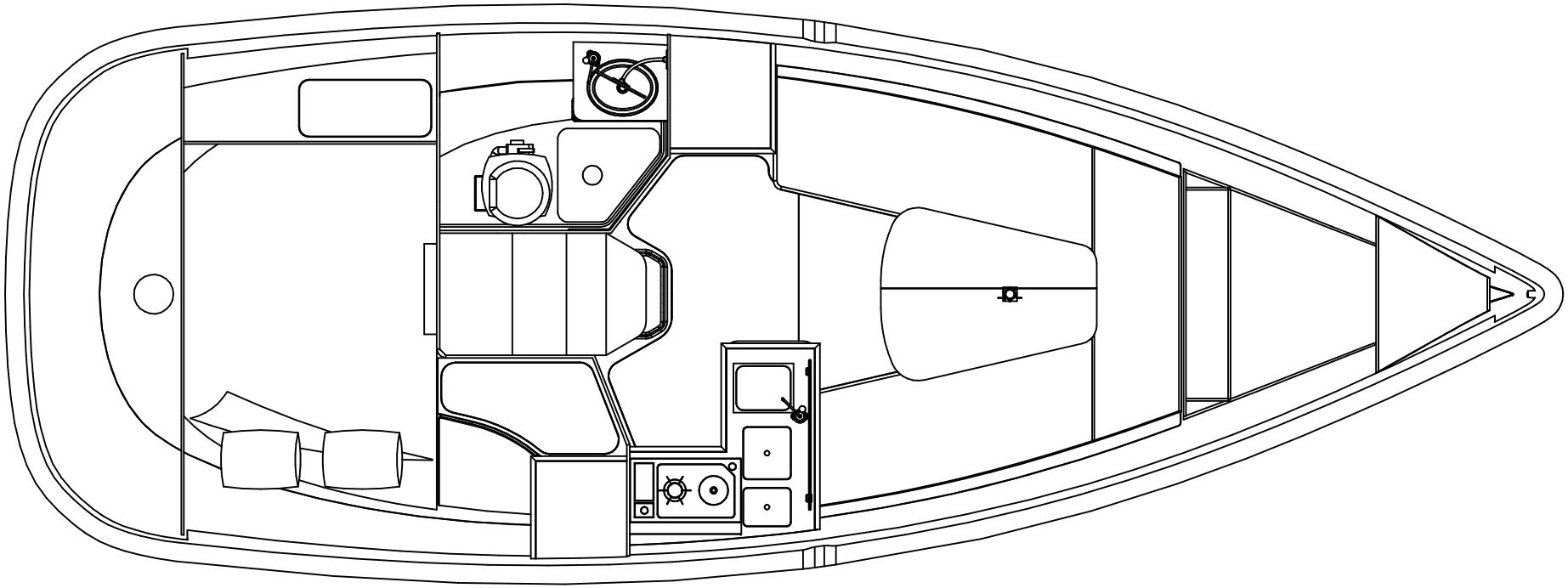
PLEASE SEE PAGE 60B FOR THRU DECK FITTINGS

H27 DECK HARDWARE LIST

ITEM	QTY.	U.O.M.	DESCRIPTION
1	1	EA.	BOW ROLLER
2	1	EA.	27 BOWRAIL
3	5	EA.	CLEAT 10" STNLESS (1 IN ANCHOR LOCKER)(U.K. 8")
4	6	EA.	27 STANCHION
5	1	EA.	LOW PROFILE ROUND HATCH
6	1 set	EA.	MAST STEP PLATE/BLOCKS
7	2	EA.	SHEET ORGANIZER
8	2	EA.	27 COMPANIONWAY SLIDER RAIL
9	2	EA.	CHAINPLATES (OUTER)
10	2	EA.	JIB TRACK SYSTEM (INCL BLOCKS) 18"
11	2	EA.	SHEETSTOPPER TRIPLE SYSTEM (EACH)
12	2	EA.	JIB TURNING BLOCK
13	2	EA.	WINCH
14	1	EA.	LEWMAR PORT PORTLIGHT SIZE 1 FROSTED
15	1	EA.	LEWMAR STBD PORTLIGHT SIZE 1 SMOKED
16	1 set	EA.	COMPANIONWAY DOOR HARDWARE
17	1	EA.	MAINSHEET BLOCK
18	1	EA.	STEERING PEDESTAL
19	1	EA.	STEERING WHEEL
20	6	EA.	COCKPIT SEAT & ANCHOR LOCKER HINGES
21	1	EA.	PORT STERNRAIL
22	1	EA.	STBD STERNRAIL
23	1	EA.	EMERGENCY TILLER
24	1	EA.	SWIMLADDER 10" AND MOUNTING COMPS
25	1	EA.	U- BOLT (ANCHOR LOCKER)
26	1	EA.	STEMPLATE
	OPTIONAL		
A	2	EA.	JIB TRACK SYSTEM (INCL BLOCKS) 1 METER
B	2	EA.	TRAVELER 1.2 M
C	2	EA.	JIB TURNING BLOCKS
D	2	EA.	WINCH

H27

Interior Layout



DRAWING TITLE: INTERIOR LAYOUT	
DRAWING NO. 278040	REVISION NO. None
DRAWN BY: ENG	DATE: 05/15/04

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HUNTER

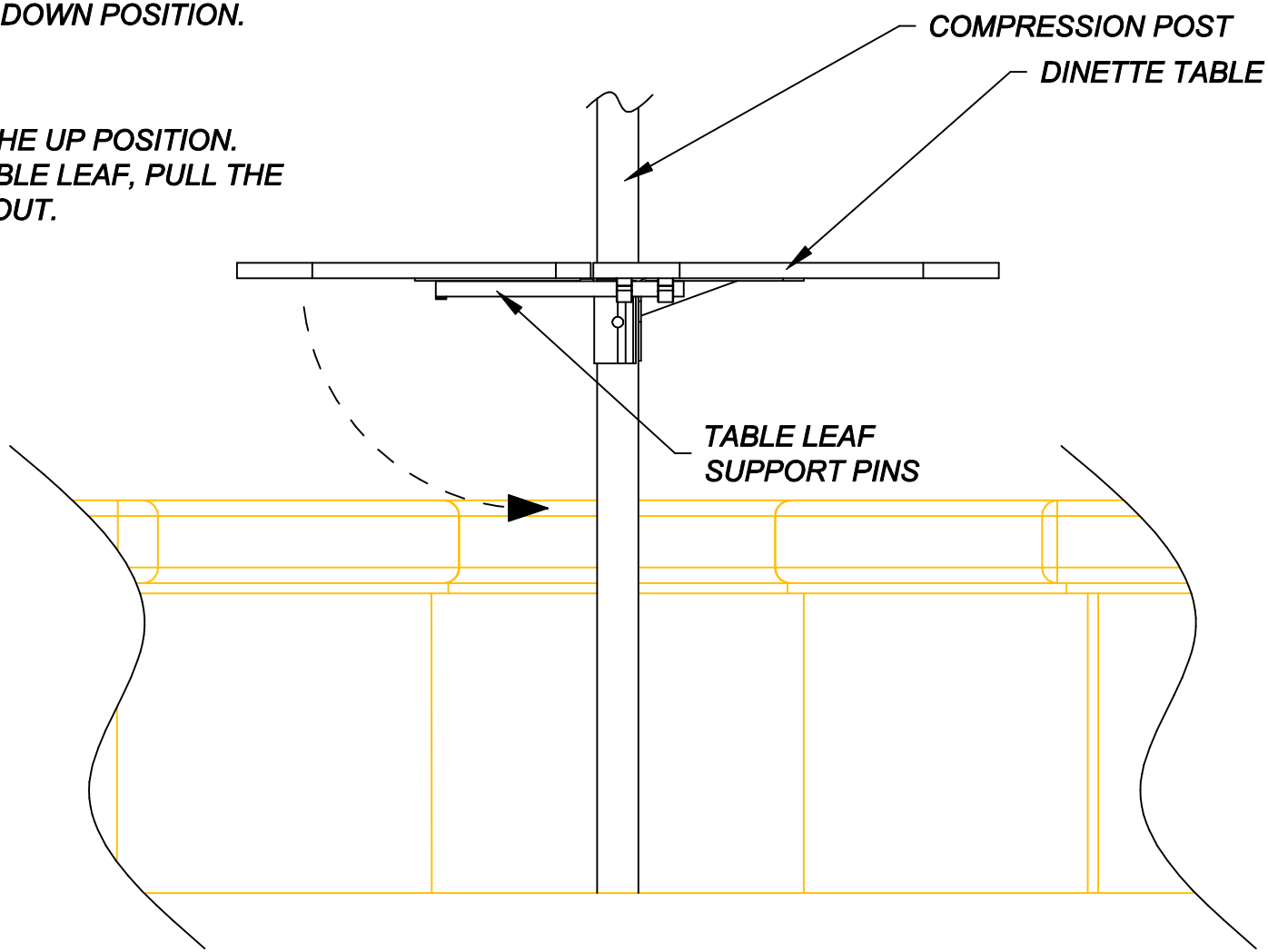
TABLE INSTRUCTIONS

TO LOWER TABLE LEAF

1. HOLD TABLE LEAF UP AND PUSH THE TABLE LEAF SUPPORT PINS IN.
2. LOWER TABLE LEAF TO THE DOWN POSITION.

TO RAISE TABLE LEAF

1. RAISE THE TABLE LEAF TO THE UP POSITION.
2. WHILE SUPPORTING THE TABLE LEAF, PULL THE TABLE LEAF SUPPORT PINS OUT.



DRAWING TITLE: DINETTE TABLE OPERATION	
DRAWING NO. 278041A	REVISION NO. None
DRAWN BY: ENG	DATE: 06/15/04

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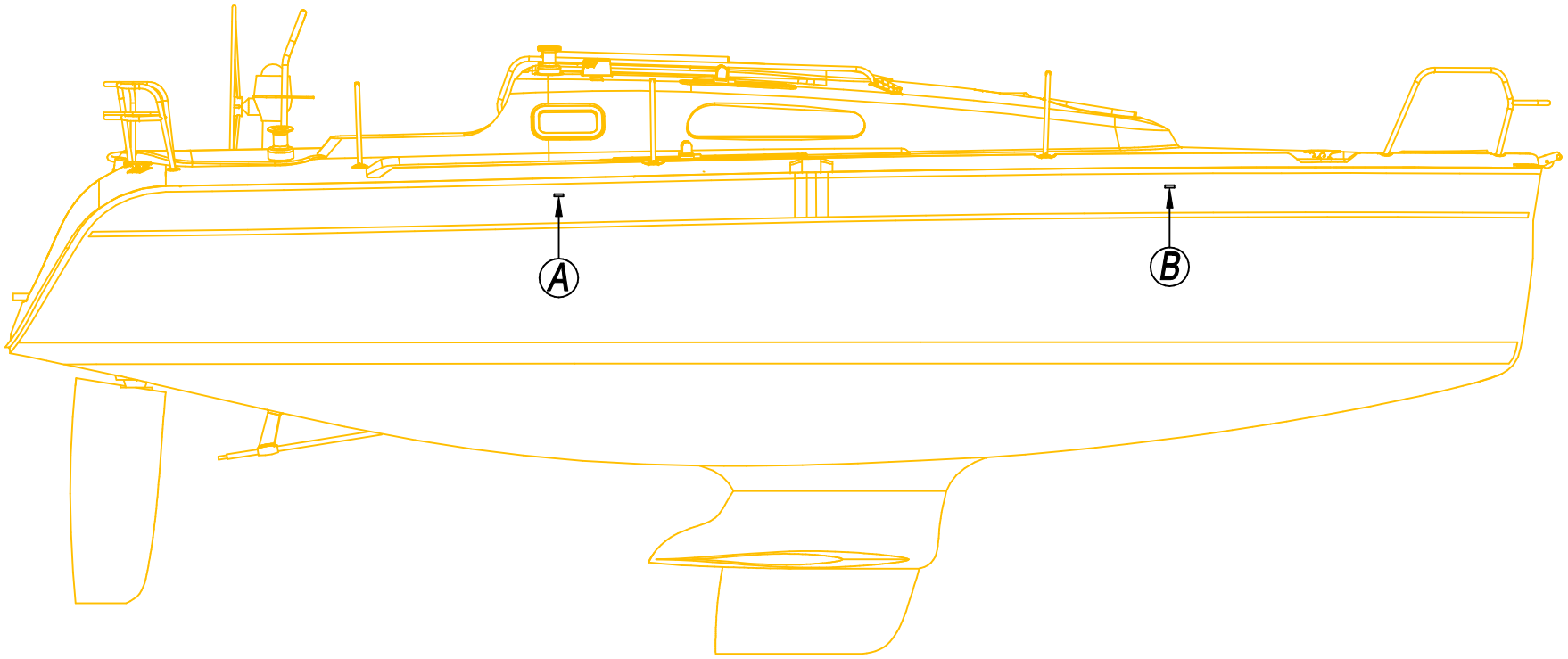
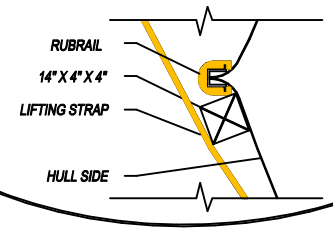
HUNTER



A AFT LIFTING POINT (INDICATED BY DECAL) PLACEMENT IS ALIGNED WITH INTERIOR STRUCTURAL SUPPORT PROVIDED BY BULKHEADS. ALSO BE SURE YOU ARE WELL FORWARD OF PROP SHAFT.

B FWD LIFTING POINT (INDICATED BY DECAL) PLACEMENT IS FWD OF CHAINPLATE SO AS TO ALIGN WITH INTERIOR STRUCTURAL SUPPORT PROVIDED BY FWD SALON BULKHEAD.

NOTE: TO AVOID DAMAGING THE RUBRAIL WHEN LIFTING THE BOAT, A 14" PIECE OF 4" X 4" WOOD SHOULD BE PLACED IN BETWEEN THE LIFTING STRAP AND THE HULL, JUST BELOW THE RUBRAIL



PAGE 41B

DRAWING TITLE: LIFTING POINTS LOCATION

DRAWING NO.	REVISION NO.
278041B	None
DRAWN BY: ENG	DATE: 06/15/04

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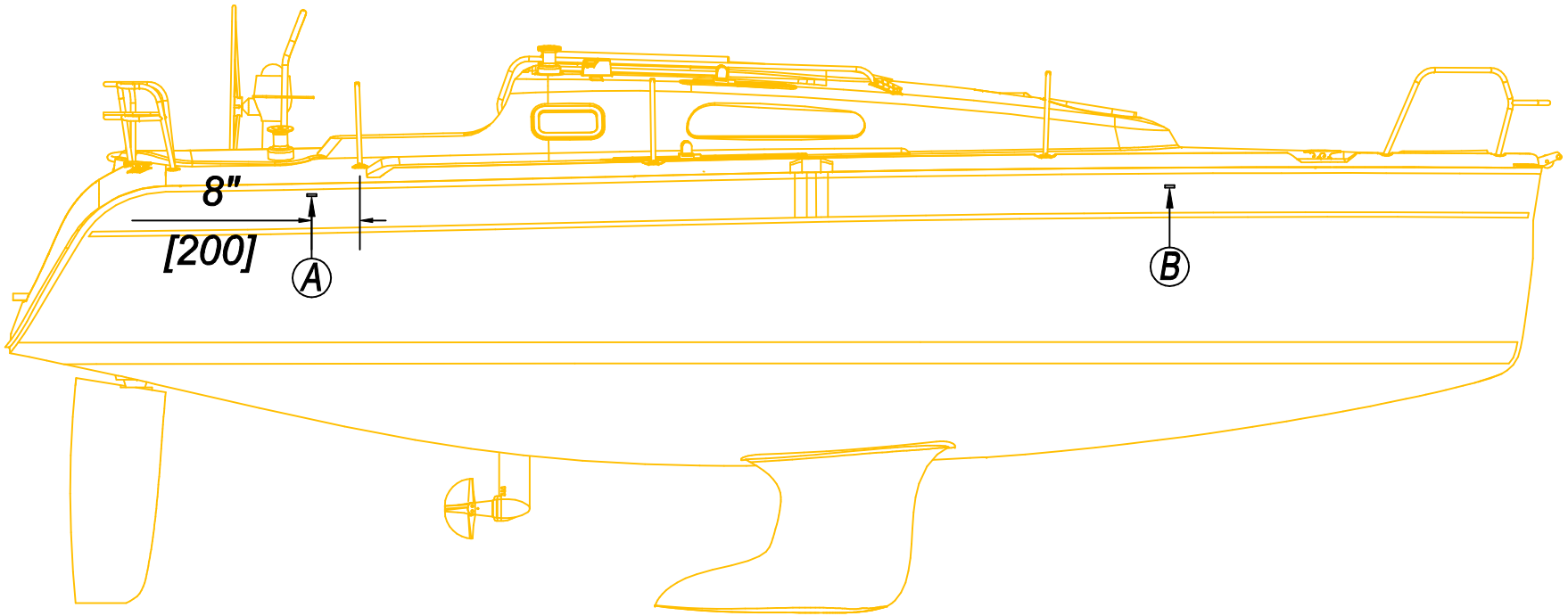
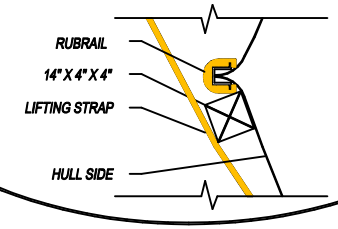
HUNTER



A AFT LIFTING POINT (INDICATED BY DECAL).
BE SURE YOU ARE WELL AFT OFF FOOT OF ENGINE.

B FWD LIFTING POINT (INDICATED BY DECAL)
PLACEMENT IS FWD OF CHAINPLATE SO AS
TO ALIGN WITH INTERIOR STRUCTURAL
SUPPORT PROVIDED BY FWD SALON
BULKHEAD.

NOTE: TO AVOID DAMAGING THE RUBRAIL WHEN LIFTING THE BOAT, A 14" PIECE OF 4" X 4" WOOD SHOULD BE PLACED IN BETWEEN THE LIFTING STRAP AND THE HULL, JUST BELOW THE RUBRAIL



PAGE 41B-2

DRAWING TITLE: LIFTING POINTS LOCATION-SAILDRIVE	
DRAWING NO. 278041B-2	REVISION NO. None
DRAWN BY: ENG	DATE: 06/15/04

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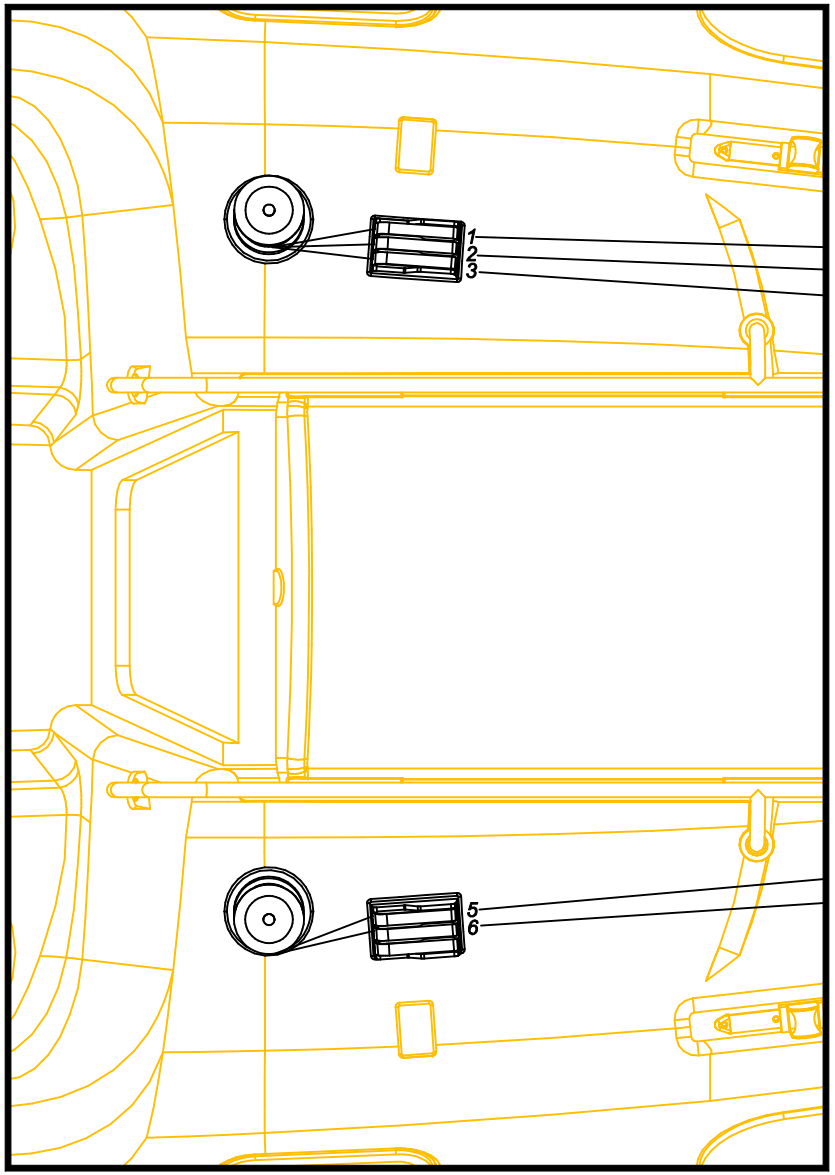
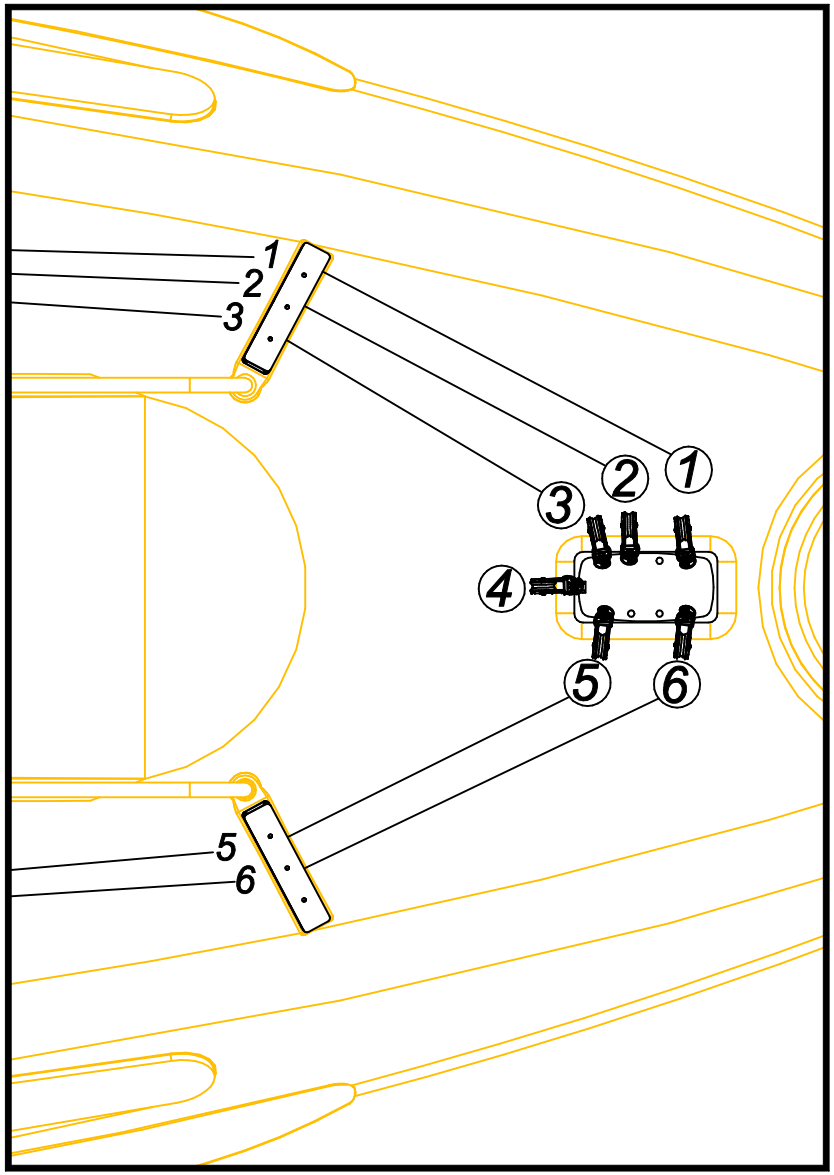
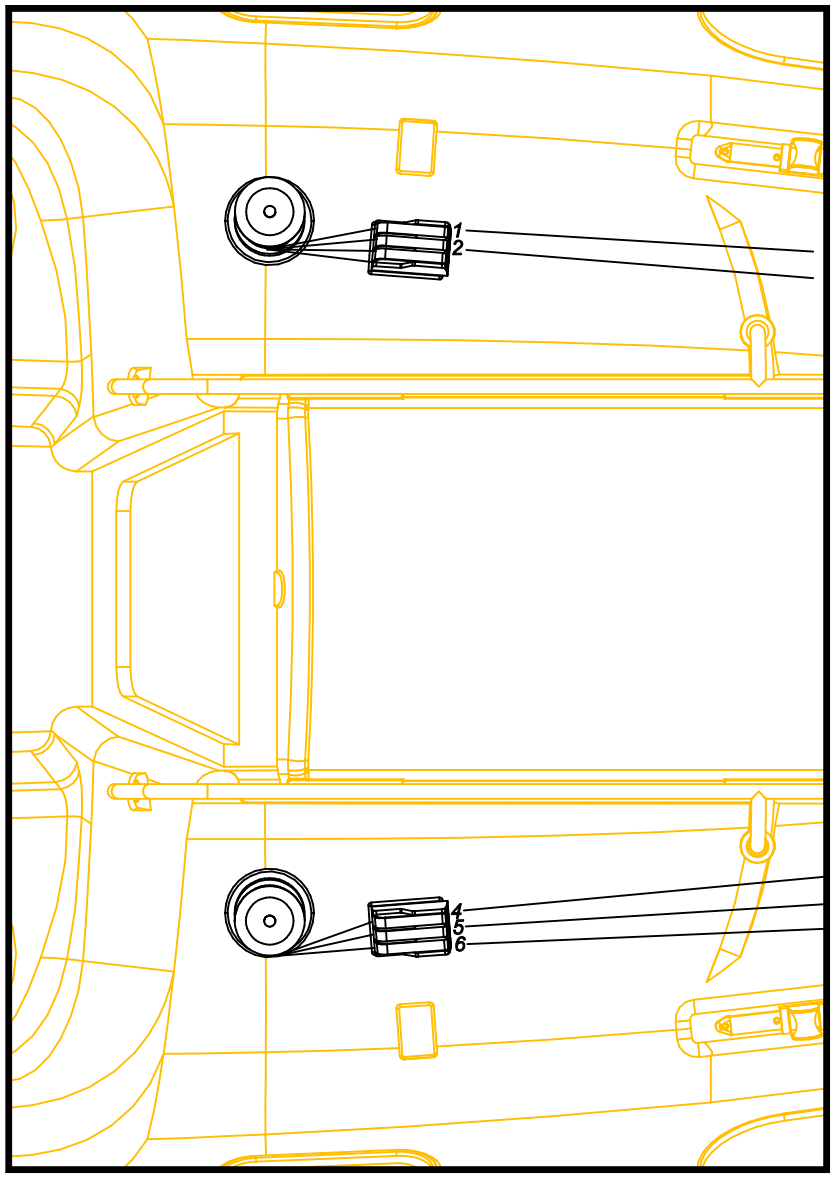


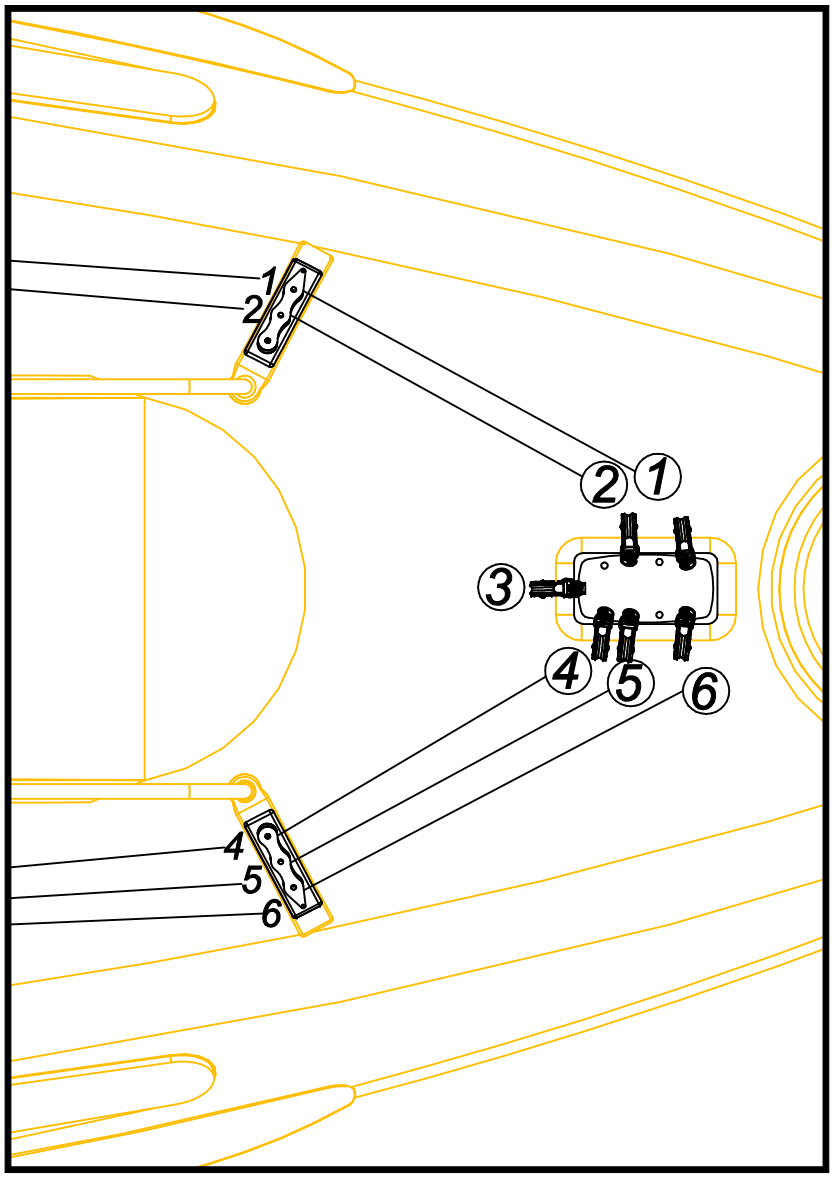


1 MAINSHEET HALYARD
2 JIB HALYARD
3 #2 REEF
4 VANG BLOCK
5 #1 REEF
6 OPT SPINNAKER HALYARD

PAGE 42A-1

DRAWING TITLE: STANDARD RUNNING RIGGING		This document discloses information for which HUNTER MARINE CORP. has proprietary rights.
DRAWING NO. 278042A–1	REVISION NO. None	HUNTER
DRAWN BY: ENG	DATE: 06/15/04	





1 JIB HALYARD
2 FURLING LINE
3 VANG BLOCK
4 MAIN HALYARD
5 OUTHAUL
6 OPT SPINNAKER HALYARD

PAGE 42A-2

DRAWING TITLE: FURLING RUNNING RIGGING	This document discloses information for which HUNTER MARINE CORP. has proprietary rights.
DRAWING NO. 278042A-2	REVISION NO. None
DRAWN BY: ENG	DATE: 06/15/04

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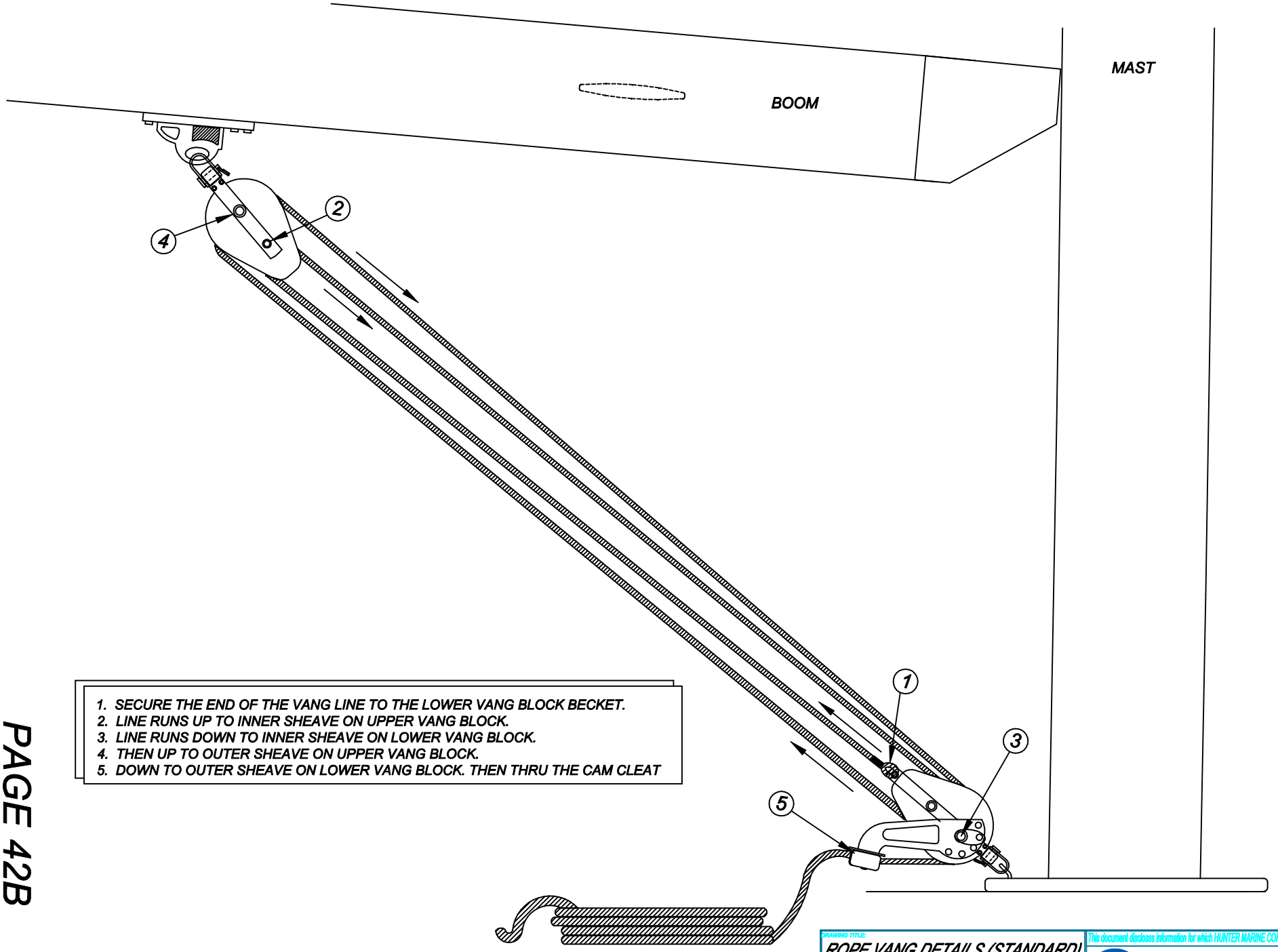

1. SECURE THE END OF THE VANG LINE TO THE LOWER VANG BLOCK BECKET.
2. LINE RUNS UP TO INNER SHEAVE ON UPPER VANG BLOCK.
3. LINE RUNS DOWN TO INNER SHEAVE ON LOWER VANG BLOCK.
4. THEN UP TO OUTER SHEAVE ON UPPER VANG BLOCK.
5. DOWN TO OUTER SHEAVE ON LOWER VANG BLOCK. THEN THRU THE CAM CLEAT

PAGE 42B

DRAWING TITLE: ROPE VANG DETAILS (STANDARD)	
DRAWING NO. 278042B	REVISION NO. NONE
DRAWN BY: ENG	DATE: 06/15/04

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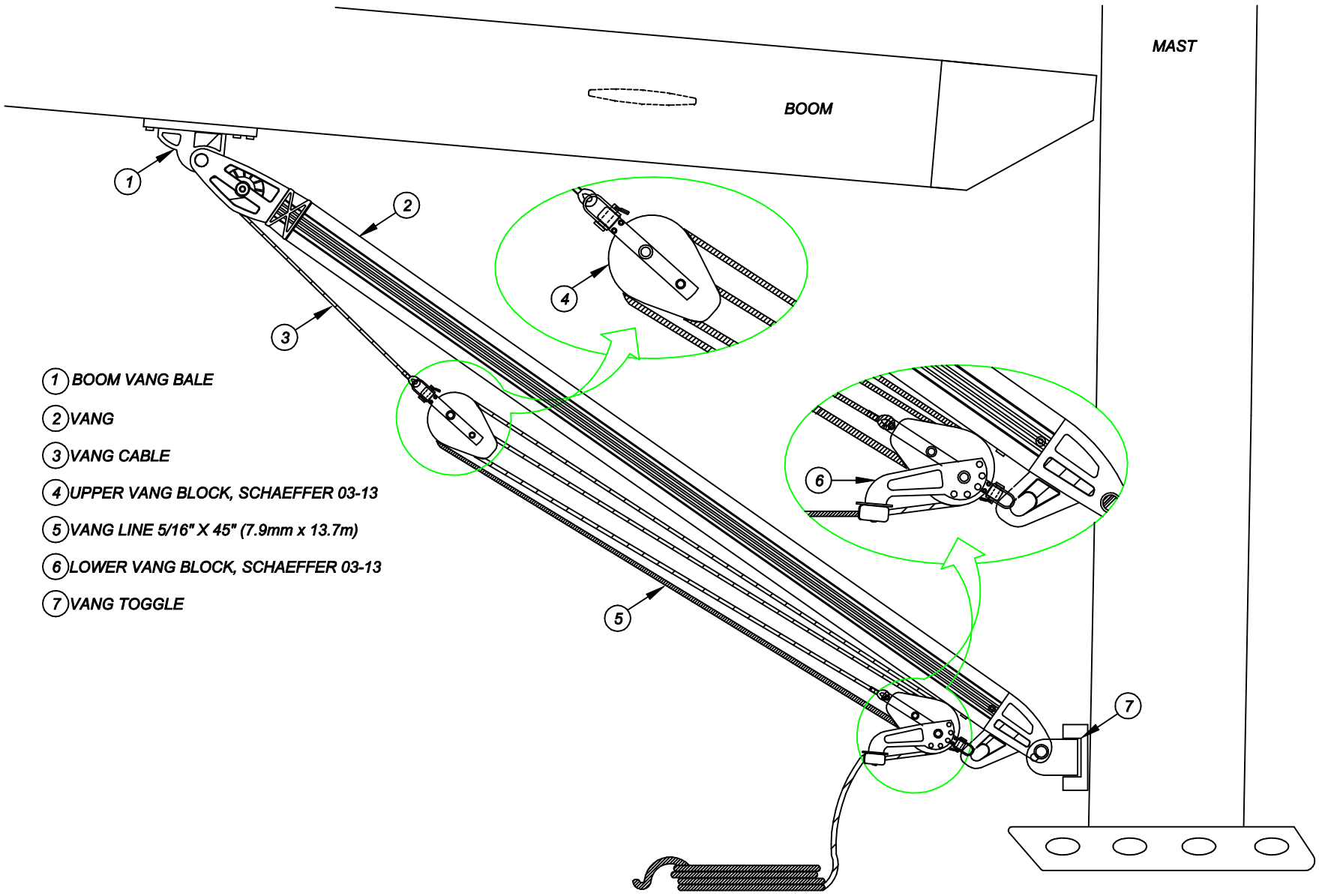

1. BOOM VANG BALE
2. VANG
3. VANG CABLE
4. UPPER VANG BLOCK, SCHAEFFER 03-13
5. VANG LINE 5/16" X 45" (7.9mm x 13.7m)
6. LOWER VANG BLOCK, SCHAEFFER 03-13
7. VANG TOGGLE

PAGE 42C

DRAWING TITLE: RIGID VANG (FURLING OPTION)

DRAWING NO.	REVISION NO.
278042C	NONE
DRAWN BY: ENG	DATE: 06/15/04

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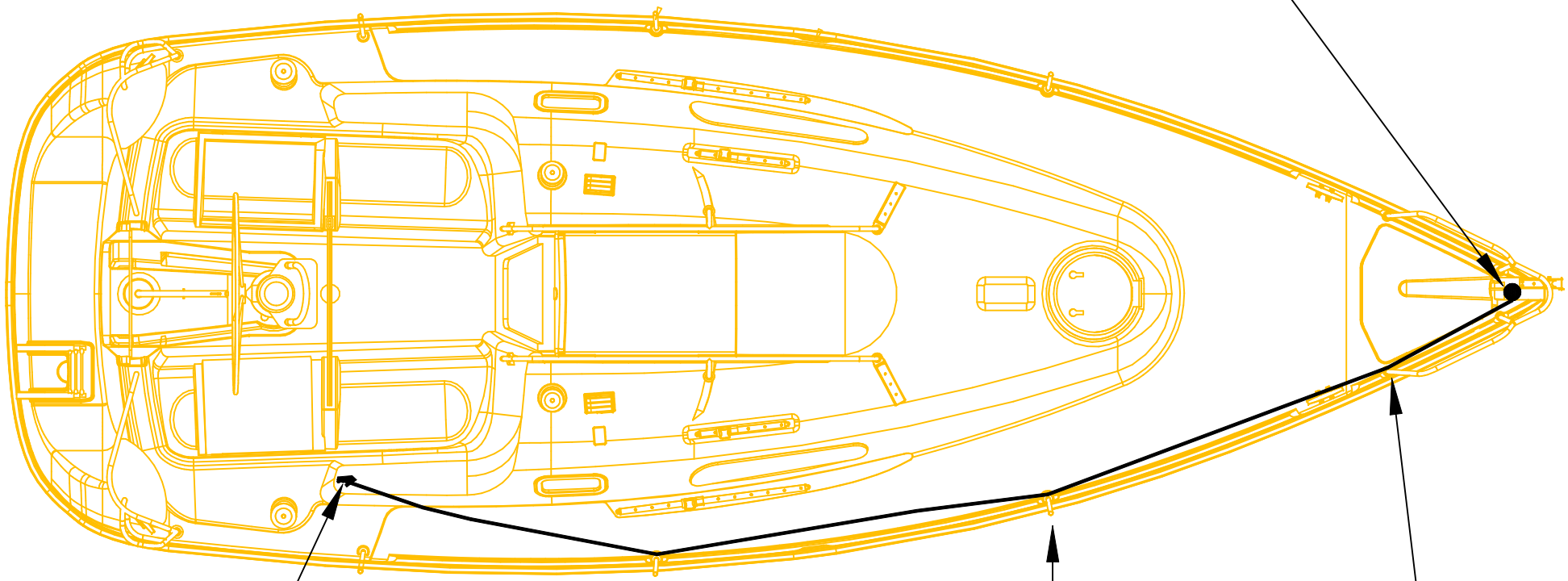

PAGE 42D

DRAWING TITLE: OPTIONAL JIB FURLING LINES LAYOUT	
DRAWING NO. 278042D	REVISION NO. None
DRAWN BY: ENG	DATE: 06/15/04

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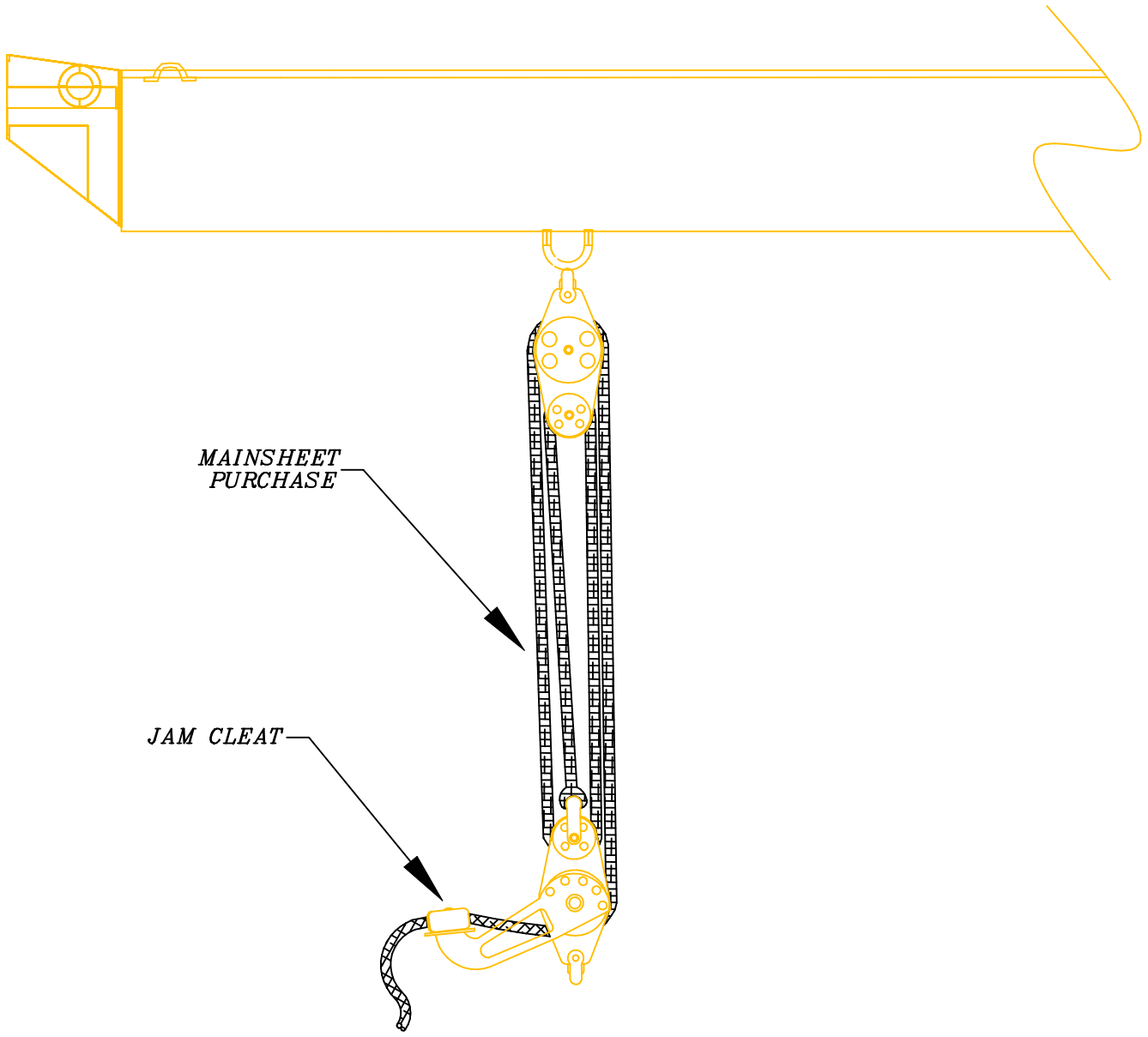

PAGE 43A

DRAWING TITLE: STANDARD MAINSHEET PURCHASE	
DRAWING NO. 278043A	REVISION NO. None
DRAWN BY: ENG	DATE: 07/15/04

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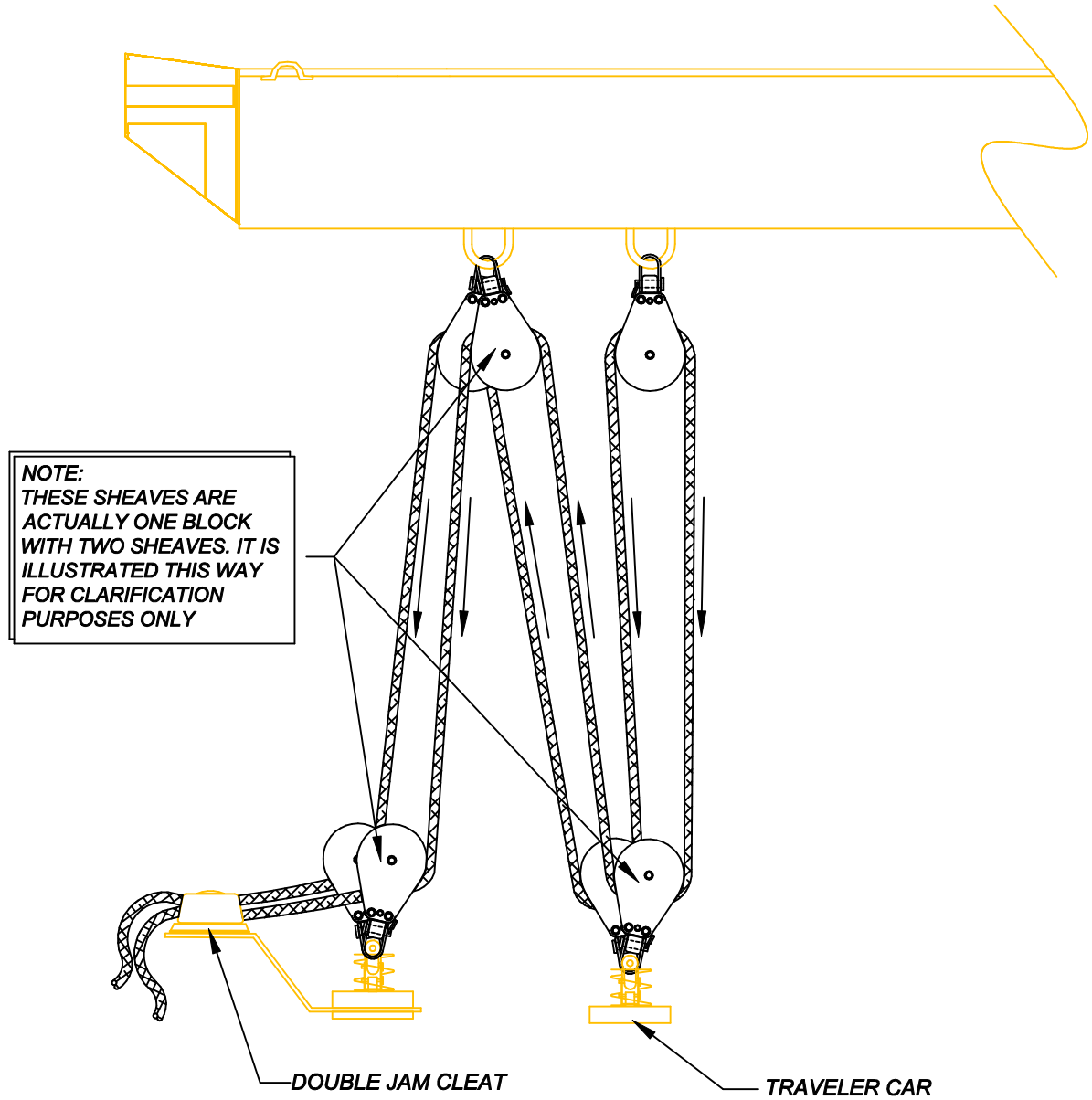
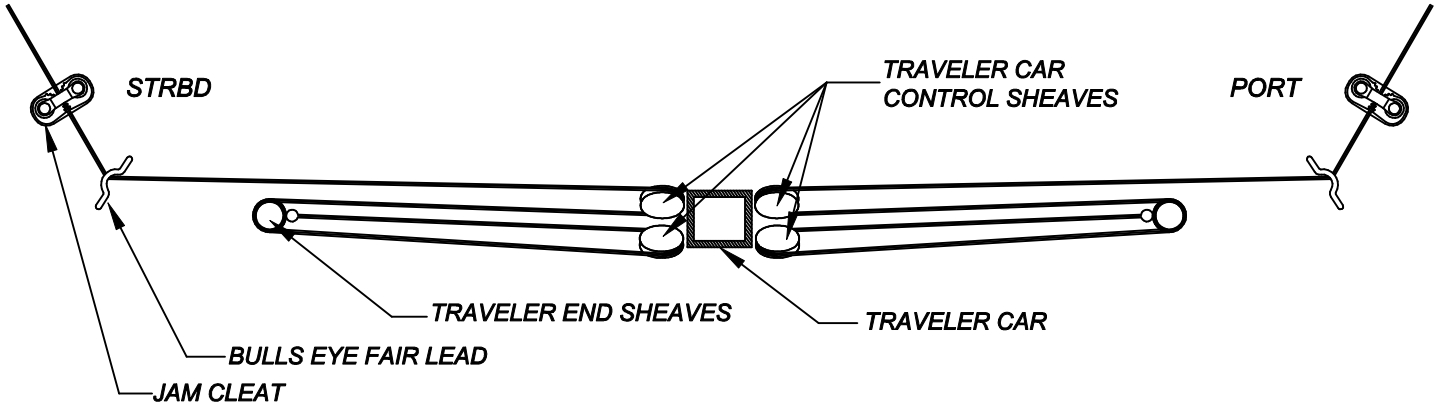
DRAWING TITLE: OPTIONAL MAINSHEET PURCHASE/TRAVELER

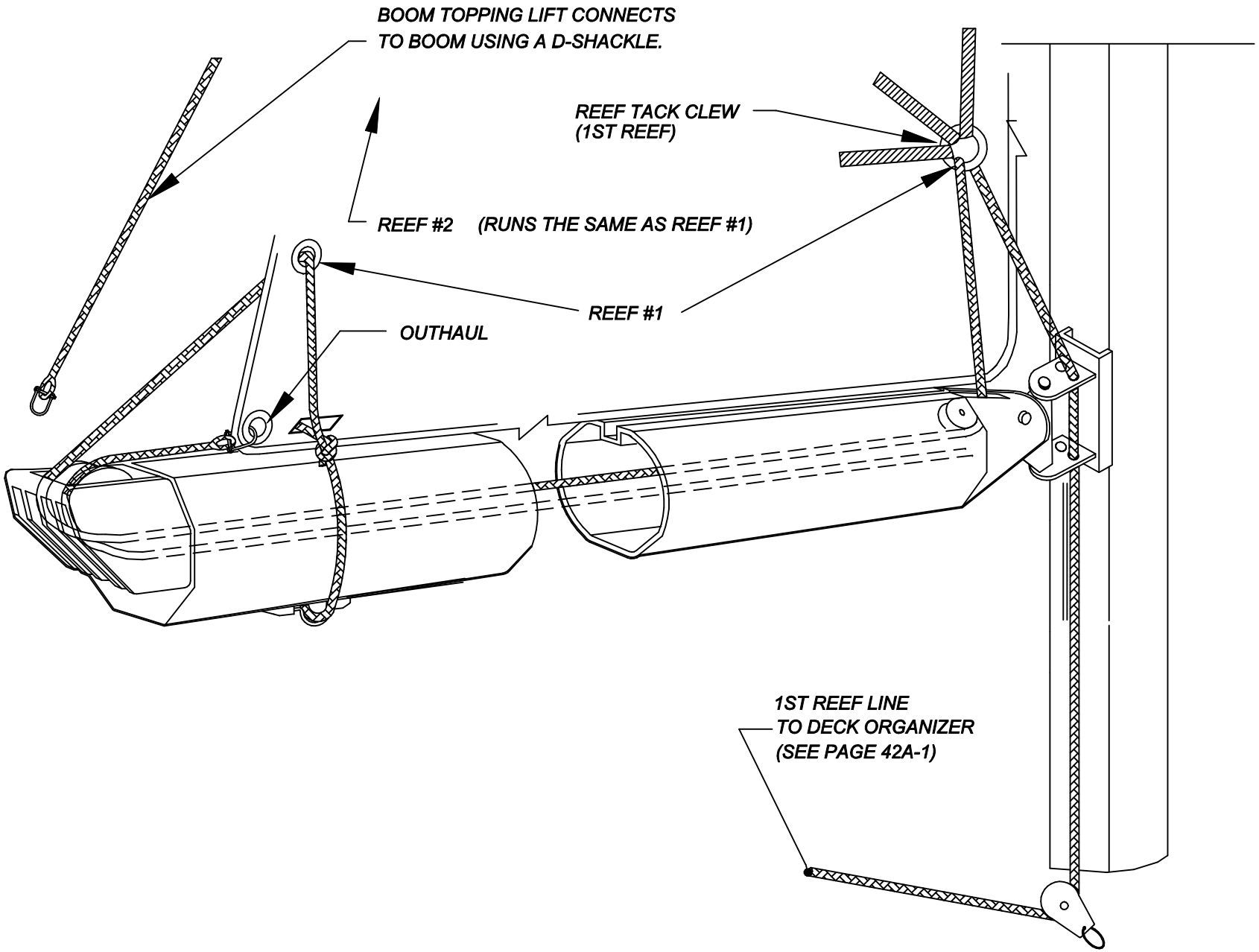
DRAWING NO.	REVISION NO.	DATE:
278043B	NONE	07/15/04

DRAWN BY: ENG





CONTROL LINE RUN SCHEMATIC
VIEW LOOKING DOWN ONTO TRAVELER



PAGE 44A

DRAWING TITLE: BOOM WITH REEFING LAYOUT	
DRAWING NO. 278044A	REVISION NO. NONE
DRAWN BY: ENG	DATE: 07/15/04

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27 REEFING INSTRUCTIONS

IF THE WIND STRENGTH BUILDS TO THE POINT WHERE THE BOAT HEELS EXCESSIVELY OR UNCOMFORTABLY, YOU MAY REDUCE THE SAIL AREA BY TAKING IN A REEF. REEFING IS EASIEST WHEN DONE ON A STARBOARD TACK (WHEN THE WIND IS BLOWING FROM THE STARBOARD SIDE) SINCE ON THE H27, THE JIB SHEET IS ON THE PORT SIDE, AND THE HALYARD WINCH IS THEN FREE. HOWEVER, REEFING CAN BE DONE ON EITHER TACK.

1. ***FEATHER THE BOAT INTO THE WIND SLIGHTLY TO REDUCE THE HEEL.***

2. ***EASE THE TENSION ON THE MAINSHEET.***

3. ***MAKE SURE THE PORT WINCH IS FREE BY EITHER PUTTING THE BOAT ON A STARBOARD TACK OR BY TAKING THE JIB SHEET AND JAMMING IT IN THE JIB SHEET JAM CLEAT BEFORE REMOVING IT FROM THE WINCH.***

4. ***TRANSFER THE MAIN HALYARD TO THE WINCH, AND TAKE UP FULL TENSION OF THE HALYARD BETWEEN THE WINCH AND THE SHEET STOPPER. THEN UNLOCK THE MAIN HALYARD SHEET STOPPER.***

5. ***LOWER THE MAIN HALYARD UNTIL THE FORWARD REEF CRINGLE ON THE SAIL CAN BE SECURED BY INSERTING THE REEF HOOK LOCATED ON THE BOOM GOOSE NECK THROUGH THE CRINGLE.***

6. ***RETENSION THE MAIN HALYARD UNTIL ALL THE SLACK OR WRINKLES ARE REMOVED FROM THE LUFF.***

7. ***TIGHTEN THE REEF LINE AT THE FORWARD END OF THE BOOM BY PULLING THE LINE DOWN THROUGH THE SHEAVE AND JAM UNTIL THE AFT REEFING CRINGLE IS AGAINST THE BOOM AND THE LINE CANNOT BE TENSIONED ANY FURTHER. THE MAINSHEET AND VANG MAY HAVE TO BE LOOSENED TO BE ABLE TO ACHIEVE THE PROPER TENSION.***

8. ***JAM THE REEF LINE AT THE GOOSENECK. RETENSION THE VANG AND MAINSHEET ACCORDINGLY. REJAM THE MAIN HALYARD AND TRANSFER THE JIB SHEET BACK TO THE WINCH IF NECESSARY.***

9. ***IF THE WIND CONTINUES TO INCREASE, YOU MAY DROP THE JIB COMPLETELY AND LASH IT TO THE DECK USING A SAIL TIE. THIS WILL ALLOW YOU TO SAIL ON A REEFED MAIN ALONE. IN SOME CASES, YOU MAY FIND IT MORE EFFECTIVE TO DROP THE JIB FIRST, BEFORE YOU TAKE IN A REEF. IT MAY ALSO BE EASIER TO TAKE IN A REEF BY TEMPORARILY LOWERING THE JIB DURING THE REEFING PROCESS.***

SHAKING OUT A REEF

1. ***TRANSFER MAIN HALYARD TO THE WINCH AS EXPLAINED ABOVE.***

2. ***EASE THE MAIN HALYARD DOWN ENOUGH TO REMOVE THE FORWARD REEF CRINGLE FROM THE REEF HOOK ON THE BOOM GOOSENECK.***

3. ***UNJAM THE REEF LINE AT THE FORWARD END OF THE BOOM.***

4. ***RAISE MAIN HALYARD USING THE WINCH. WHILE DOING SO, ENSURE THE REEFING LINE CONTINUES TO RUN THROUGH THE SAIL REEF CRINGLE AND THE FORWARD BOOM JAM.***

5. ***TENSION THE MAIN HALYARD AND REJAM***

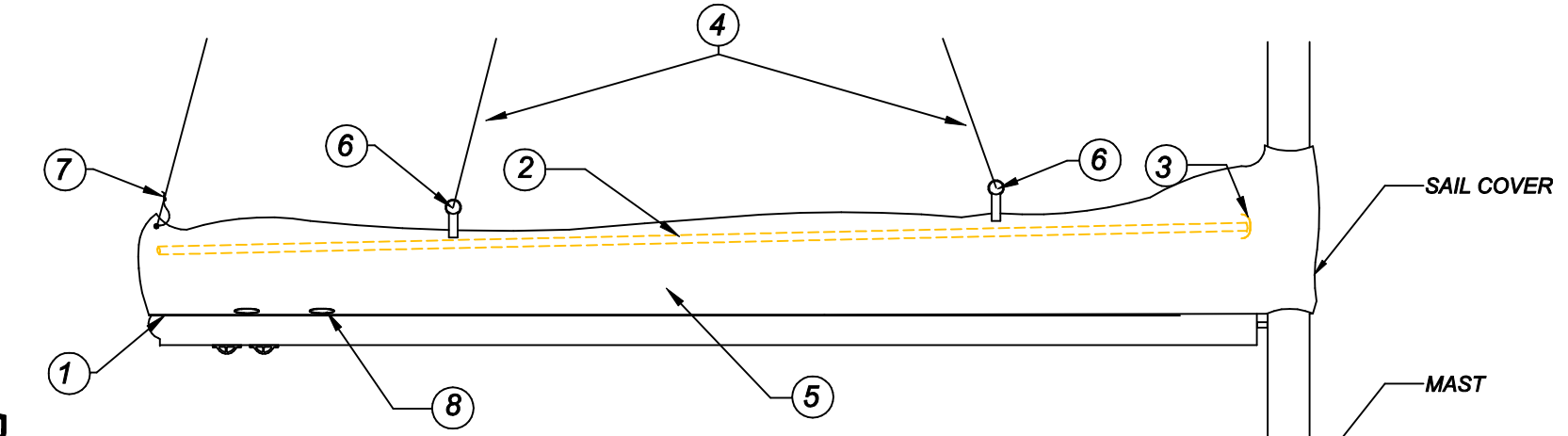
6. ***ADJUST THE SHEET AND VANG AS NECESSARY.***

SLIDE THE BOLTROPE INTO BOOM TRACK①. START FROM THE AFT END AND MAKE YOUR WAY FORWARD.

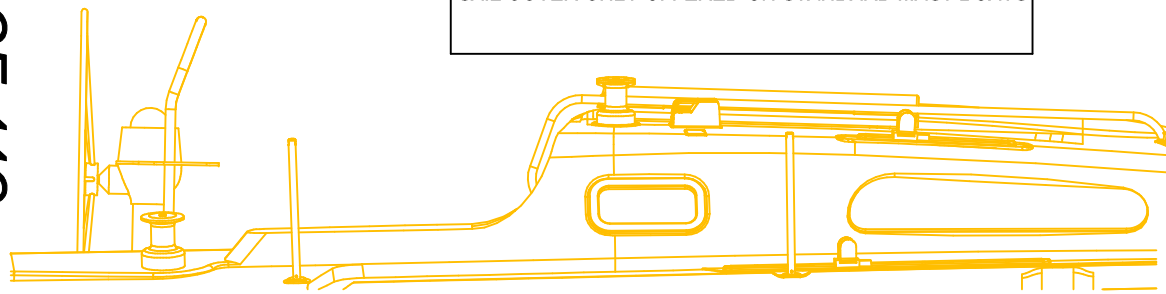
INSTALL THE PVC BATTENS② INTO EACH HALF OF THE SAIL COVER. THERE ARE POCKETS③ THAT OPEN TOWARDS THE FRONT, ON THE INSIDE OF THE COVER. SLIDE THE BATTENS INTO PLACE FROM THE FRONT, AND ROLL THE INSIDE LIP OF THE POCKET BACK IN ORDER TO HOLD THE BATTENS STATIONARY.

FEED THE LAZYJACK LINES ④ TO THE SAIL COVER ⑤ AND DEAD END THE LINES TO THE FWD AND AFT BAILS ⑥ ON THE SAIL COVER.

TIE THE AFT END OF THE SAIL COVER UP TO THE TOPPING LIFT LINE USING THE PIECE OF STRING PROVIDED⑦. USE HALF HITCH KNOTS TO SECURE THE COVER IN PLACE AT THE OUTER END OF THE BOOM. THE REEF LINES RUN OUT THROUGH THE COVER SLOTS⑧ AND TIE OFF.



SAIL COVER ONLY OFFERED ON STANDARD MAST BOATS

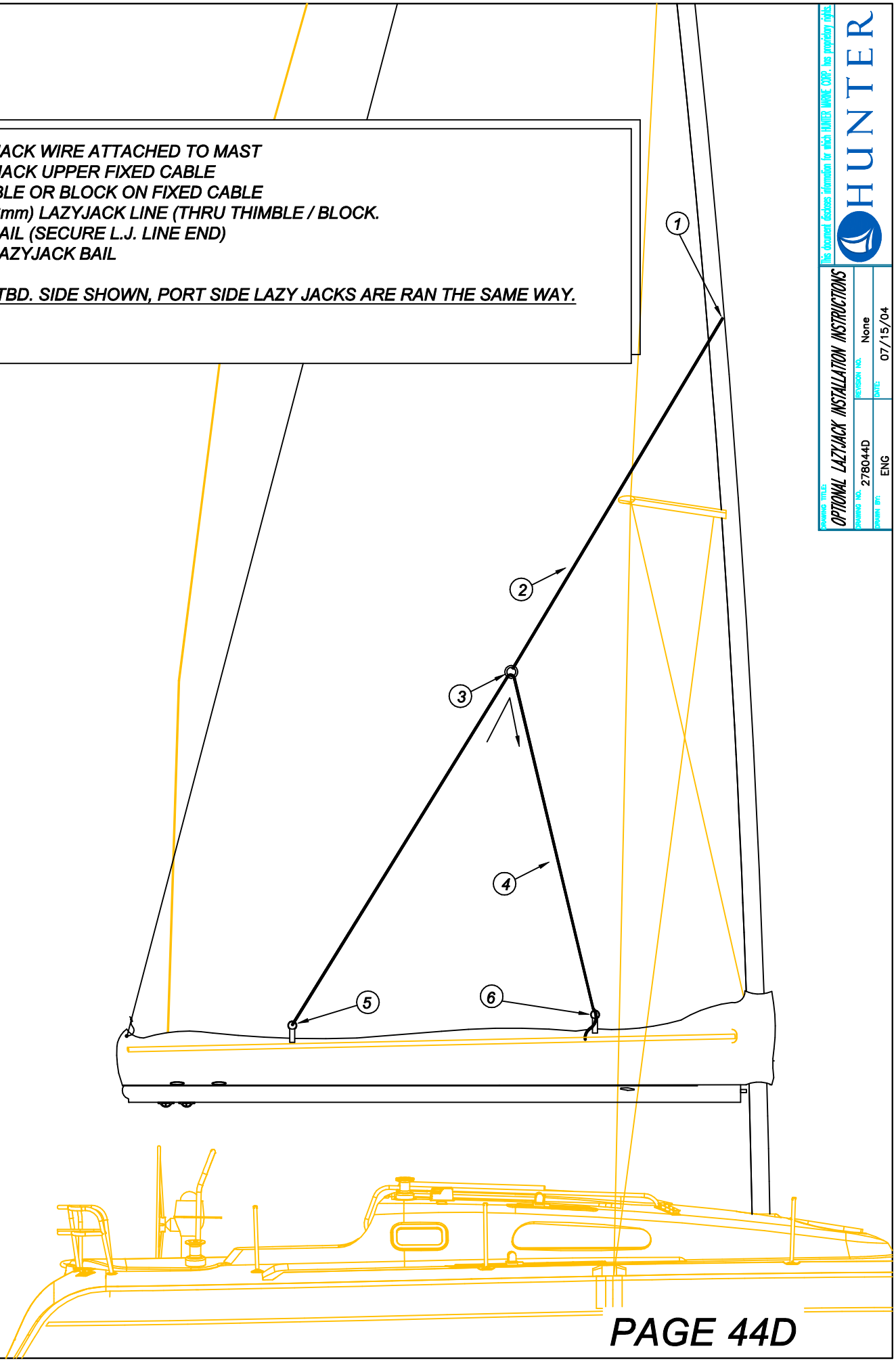


PAGE 44C

DRAWING TITLE: OPTIONAL LAZYJACK SAIL COVER		This document discloses information for which HUNTER MARINE CORP., has proprietary rights.
DRAWING NO. 278044C	REVISION NO. None	HUNTER
DRAWN BY: ENG	DATE: 07/15/04	

1. LAZYJACK WIRE ATTACHED TO MAST
2. LAZYJACK UPPER FIXED CABLE
3. THIMBLE OR BLOCK ON FIXED CABLE
4. 1/4" (6mm) LAZYJACK LINE (THRU THIMBLE / BLOCK.
5. AFT BAIL (SECURE L.J. LINE END)
6. FWD LAZYJACK BAIL

NOTE: STBD. SIDE SHOWN, PORT SIDE LAZY JACKS ARE RAN THE SAME WAY.



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HUNTER

DRAWING TITLE: OPTIONAL LAZYJACK INSTALLATION INSTRUCTIONS

DRAWING NO.	REVISION NO.	DATE:
278044D	None	07/15/04

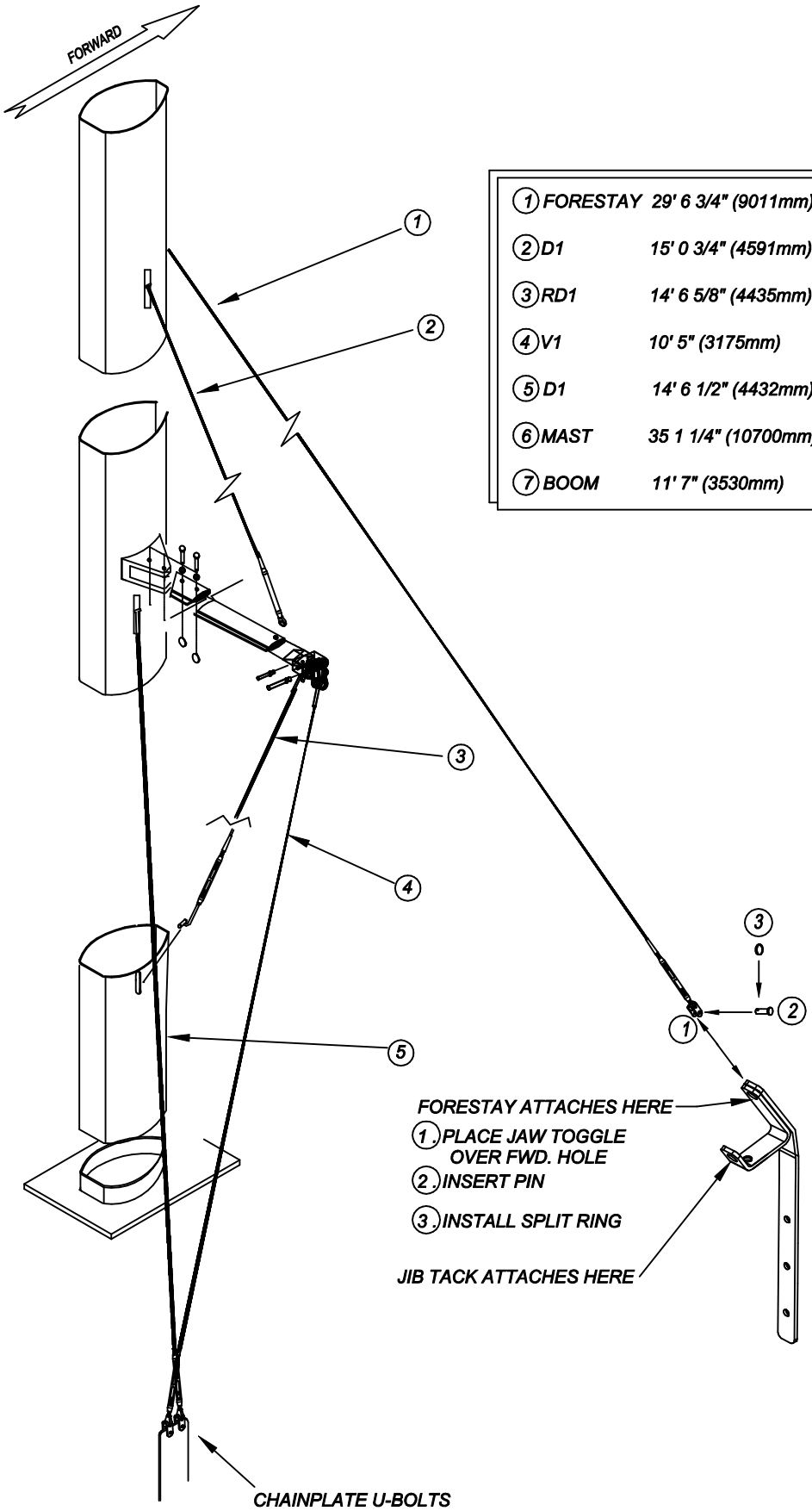
DRAWN BY: ENG

HUNTER 27 STANDARD RUNNING RIGGING SPECIFICATIONS									
Boat: HUNTER 27 CONV.						**Date**: **8/17/04**			
OPT/STD		**ITEM**	**QTY**	**Line Size**	**Color**	**End 1**	**Length**		**End 2**
1	STD	MAIN TRAVELER LINE	2	5/16" (8mm)	WHITE	EYE	20'	6.1m	BARE
2	STD	MAINSHEET	1	3/8" (9.5mm)	WHITE	EYE	71'	21.6m	BARE
3	STD	JIB SHEET	2	7/16" (11mm)	WHITE	BARE	38'	11.7m	BARE
4	STD	VANG	1	3/8" (9.5mm)	WHITE	EYE	25'	7.6m	BARE
5	STD	MAIN HALYARD	1	5/16" (8mm)	RED	6mm SHACKLE	79.5'	24.2m	BARE
6	STD	JIB HALYARD	1	5/16" (8mm)	BLUE	6mm SHACKLE	64'	19.6m	BARE
7	STD	BOOM TOPPING LIFT	1	1/4" (6mm)	YELLOW	6mm SHACKLE	79.5'	24.2m	BARE
8	STD	OUTHAUL LINE	1	5/16" (8mm)	BLACK	BARE	28.5'	8.7m	BARE
9	STD	REEFING LINE #1	1	5/16" (8mm)	BLUE	BARE	57.5'	17.5m	BARE
10	OPT	LAZY JACK LINE	2	1/4" (6mm)	WHITE	BARE	19'	5.8m	BARE
11	OPT	FIXED LAZY JACK WIRE	2	1/4" (6mm)	WHITE	D-SHACKLE TO EYE	8.25'	2.5m	EYE
12	STD	REEFING LINE #2	1	5/16" (8mm)	GREEN	BARE	80.4'	24.5m	BARE

HUNTER 27 FURLING
RUNNING RIGGING SPECIFICATIONS

Boat: HUNTER 27 FURLING | **Date: 8/17/04**

OPT	STD	ITEM	QTY	Line Size	Color	End 1	Length		End 2
1	STD	MAIN TRAVELER LINE	2	5/16" (8mm)	WHITE	EYE	20'	6.1m	BARE
2	STD	MAINSHEET	1	3/8" (9.5mm)	WHITE	EYE	71'	21.6m	BARE
3	STD	JIB SHEET	2	7/16" (11mm)	WHITE	BARE	38'	11.7m	BARE
4	STD	VANG	1	3/8" (9.5mm)	WHITE	EYE	25'	7.6m	BARE
5	STD	MAIN HALYARD	1	5/16" (8mm)	RED	FURLING SHACKLE #56	80.7'	24.6m	BARE
6	STD	JIB HALYARD	1	5/16" (8mm)	BLUE	6mm SHACKLE	64'	19.6m	BARE
7	STD	BOOM TOPPING LIFT	1	1/4" (6mm)	YELLOW	6mm SHACKLE	80.7'	24.6m	BARE
8	STD	INHAUL LINE	1	5/16" (8mm)	BLACK	BARE	52.5'	16m	BARE
9	STD	OUTHAUL LINE	1	5/16" (8mm)	BLACK	BARE	52.5'	16m	BARE
10	STD	ROLLER FURLING LINE	1	5/16" (8mm)	WH /BLK FLECK	BARE	42'	12.8m	BARE



1	FORESTAY	29' 6 3/4" (9011mm)
2	D1	15' 0 3/4" (4591mm)
3	RD1	14' 6 5/8" (4435mm)
4	V1	10' 5" (3175mm)
5	D1	14' 6 1/2" (4432mm)
6	MAST	35 1 1/4" (10700mm)
7	BOOM	11' 7" (3530mm)

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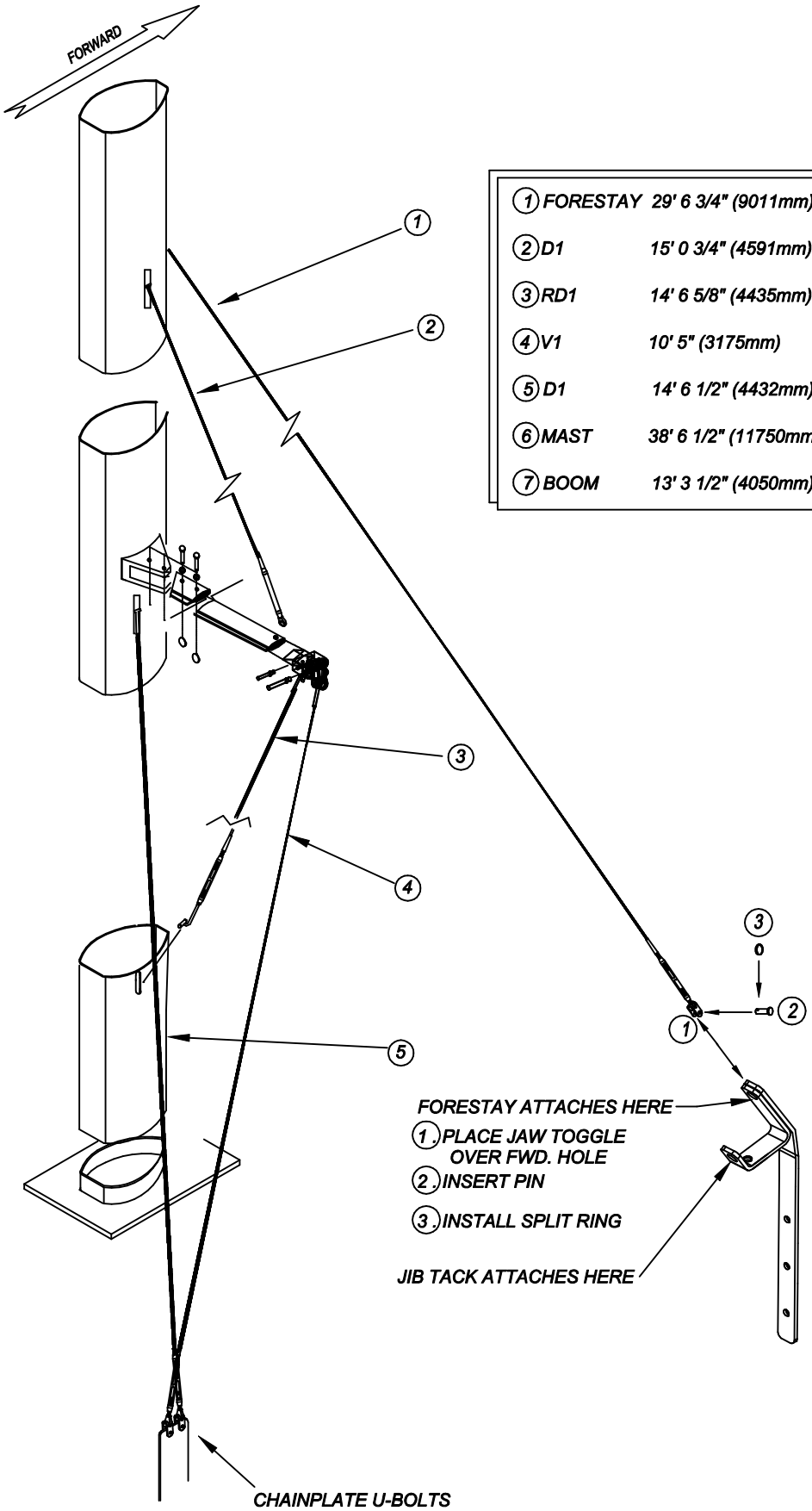
HUNTER

DRAWING TITLE: STANDING RIGGING (STANDARD)

DRAWING NO. 278046A-1 | REVISION NO. NONE | DATE: 07/15/04 | DRAWN BY: ENG



1	FORESTAY	29' 6 3/4" (9011mm)
2	D1	15' 0 3/4" (4591mm)
3	RD1	14' 6 5/8" (4435mm)
4	V1	10' 5" (3175mm)
5	D1	14' 6 1/2" (4432mm)
6	MAST	38' 6 1/2" (11750mm)
7	BOOM	13' 3 1/2" (4050mm)

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HUNTER

DRAWING TITLE: STANDING RIGGING (FURLING)

DRAWING NO.	2780468A-2
REVISION NO.	NONE
DRAWN BY:	ENG
DATE:	07/15/04

HUNTER 27 CONVENTIONAL

STANDING RIGGING

	ITEM	QTY	WIRE SIZE		FITTINGS	OVERALL LENGTH	
1	HEADSTAY	1	3/16"	4.8mm	EYE DRILLED 10mm	**29' 6 3/4"**	**9049mm**
					TURNBUCKLE 5/16" PIN		
2	D1	2	3/16"	4.8mm	Z428 + BALL SWAGE	**15' 3/4"**	**4591mm**
					TURNBUCKLE 5/16" PIN		
3	V1	2	3/16"	4.8mm	TOGG/FORK 10mm	**14' 6 5/8"**	**4435mm**
					TURNBUCKLE 5/16" PIN		
4	RD1	2	5/32"	4mm	EYE DRILLED 8mm	**10' 5"**	**3175mm**
					Z423 + BALL/TURNBUCKLE		
5	D2	2	3/16"	4.8mm	Z428 + BALL SWAGE	**14' 6 1/2"**	**4432mm**
					EYE DRILLED 10mm		
6	MAST					**35' 1 1/4"**	**10700mm**
7	BOOM					**11' 7"**	**3530mm**

1. ALL ADJUSTABLE RIGGING IS DIMESIONED WITH TURNBUCKLES 2/3 OPEN.
2. LENGTHS DO NOT INCLUDE SPREADER TIP LINKAGE.

HUNTER 27 FURLING

STANDING RIGGING

	ITEM	QTY	WIRE SIZE		FITTINGS	OVERALL LENGTH	
1	HEADSTAY	1	3/16"	4.8mm	EYE DRILLED 10mm	**29' 6 3/4"**	**9049mm**
					TURNBUCKLE 5/16" PIN		
2	D1	2	3/16"	4.8mm	Z428 + BALL SWAGE	**15' 3/4"**	**4591mm**
					TURNBUCKLE 5/16" PIN		
3	V1	2	3/16"	4.8mm	TOGG/FORK 10mm	**14' 6 5/8"**	**4435mm**
					TURNBUCKLE 5/16" PIN		
4	RD1	2	5/32"	4mm	EYE DRILLED 8mm	**10' 5"**	**3175mm**
					Z423 + BALL/TURNBUCKLE		
5	D2	2	3/16"	4.8mm	Z428 + BALL SWAGE	**14' 6 1/2"**	**4432mm**
					EYE DRILLED 10mm		
6	MAST					**38' 6 1/2"**	**11750mm**
7	BOOM					**13' 3 1/2"**	**4050mm**

1. ALL ADJUSTABLE RIGGING IS DIMESIONED WITH TURNBUCKLES 2/3 OPEN.
2. LENGTHS DO NOT INCLUDE SPREADER TIP LINKAGE.

TUNING THE H27 B&R RIG

The easiest method for tuning the B&R rig is to perform step one as follows before the mast is stepped, with it lying aft side up on two sawhorses. Begin with all rigging slack. If the mast is already stepped, loosen all the rigging, and then proceed to step one.

1. **Start with all the rigging slack. Then induce the mast bend by tightening the reverse diagonals (diamonds). Measure the bend by tensioning a line or the main halyard between the masthead and the gooseneck. The maximum amount of bend should be no more than 1% of the length of "P" for the standard rig and no more than 2" [50mm] for the furling mast. Measured perpendicular from the aft face of the mast to the halyard at the deepest part of the bend. It can be less than that based on the sail shape and your own preference. The bend should also be evenly distributed along the mast to give a smooth shape. Keep in mind that bending a furling mast may make it more difficult to furl and will not do much to flatten the sail as in a standard rig. It is very important that the mast also be straight from side to side at this time. Tighten or loosen the reverse diagonals to achieve this.**

2. **Step the mast with all shrouds attached but with the turnbuckles completely loosened (if the mast was not already stepped).**

3. **Attach the jib halyard to a cleat on the bow to support the mast in a raked position (the masthead should be about 2'-0" [~6cm] behind the step). Attach the verticals and tighten them until you can just see the hole for the cotter pin in the turnbuckle. Tighten the jib halyard until you can attach the forestay. At this point the masthead should be raked so that a weight hung on the main halyard hangs about 1' behind the mast step.**

4. **Use the main halyard to check that the mast is centered from side to side. Pull it tight and mark the halyard next to the verticals chainplate. Now do the same to the other side to see if the marks line up. If not, tighten and/or loosen the verticals until the marks line up. Once the masthead is centered, begin tightening the verticals until the turnbuckles are approximately half closed. While tightening the verticals you may notice the bend in the mast increasing. Now you can tighten the lowers, which will tend to straighten the lower part of the mast. Be sure to tighten port and starboard sides evenly.**

5. **Now you should tighten the headstay until it is approximately half closed as well. This should induce the appropriate amount of headstay tension. *Never use anything more than a pair of* wrenches to tighten your rigging. If you use an extended piece of pipe on the handle of a wrench you can over tighten the rigging and do damage to the mast or rigging.**

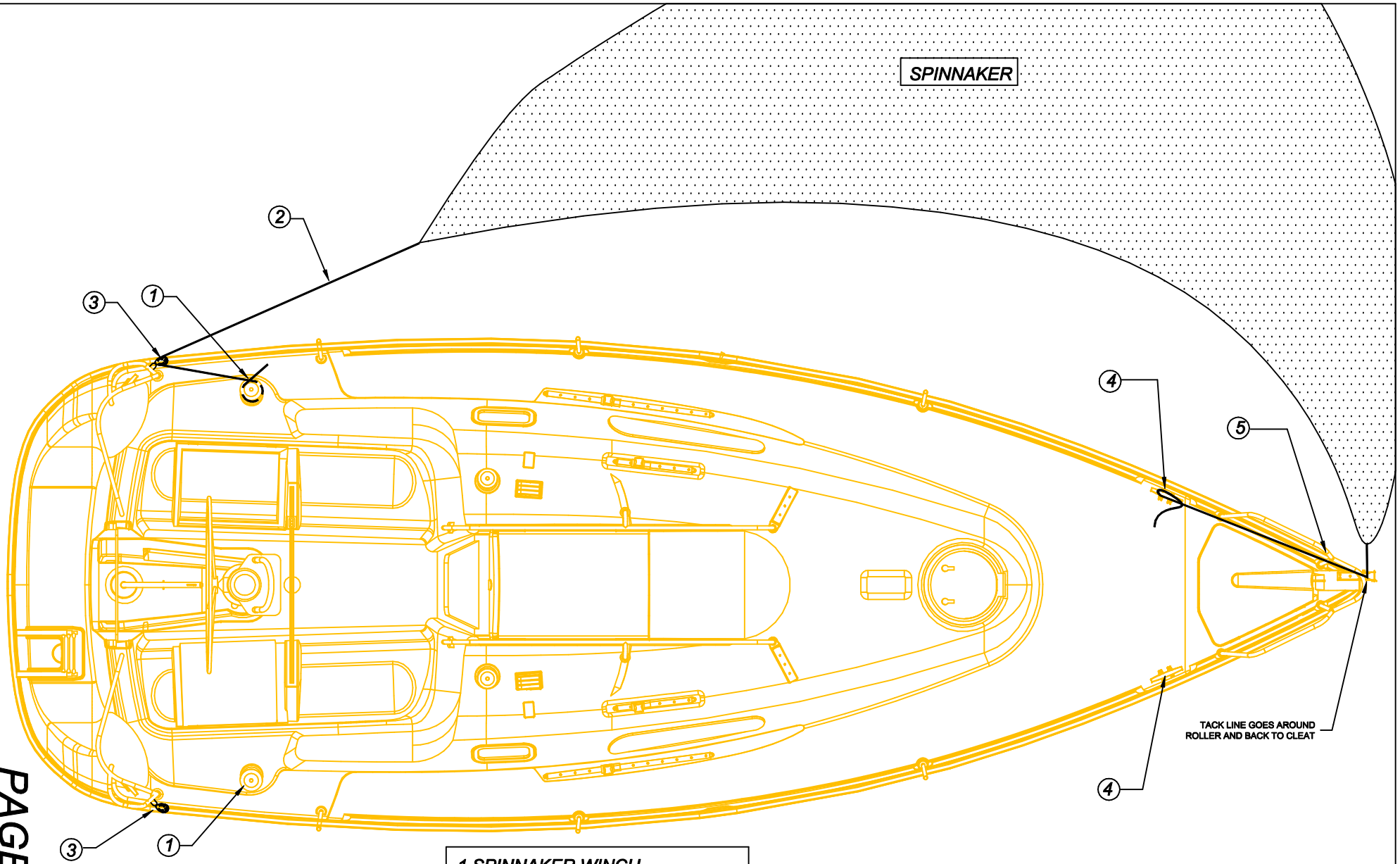
6. **The final test is to go sailing in 10-15 knots of wind. If when sailing upwind, the shrouds on the leeward side are slack then tighten them to remove about half the slack keeping note of the number of turns. Then tack and do the same to the other side. Do this until you are happy with the tension and the leeward side does not get loose when the boat is heeled. Now sight up the mast to be sure it is still relatively straight from side to side. If it is not then adjust to appropriate rigging to correct it. Remember to always tighten the leeward shroud, tack and tighten the new leeward shroud the same amount. This prevents damage to the turnbuckles and is also much easier to do. Keep in mind it is also possible to have something too tight such as a diagonal shroud.**

7. **At this point you should have adequate headstay tension. The sails are built for an average of 14" [350mm] of headstay sag, possibly more or less depending upon light or heavy air. The bend in the standard mast should be about 1%(maximum) of "P" and 2" [25mm] (maximum) in the furling mast and it should be nearly straight from side to side when sailing upwind. If any of these are not true then revisit the appropriate step above to correct it. If the**

sag in the headstay is too much then adding tension to the verticals will fix it.

8. **Once the rig is tuned you should make sure to add the cotter pins to all the rigging bending back the ends and taping them to prevent snagged lines, sails and fingers.**

Remember that rigging, like everything else, can age. As it gets older it may need to be replaced. The frequency for which this becomes necessary depends on the climate and conditions in which the boat is sailed. For example: if you sail in the Caribbean it should be replaced every 2-3 years compared to every 10 for the great lakes. You should consult a professional rigger for advice.



1. SPINNAKER WINCH
2. SPINNAKER SHEET
3. SPINNAKER SHEET BLOCK
4. SPINNAKER TACK LINE CLEAT
5. SPINNAKER TACK LINE

SEE PAGES 42A-1&2 FOR SPINNAKER HALYARD LAYOUT

DRAWING TITLE: OPTIONAL SPINNAKER LAYOUT	
DRAWING NO. 278050	REVISION NO. None
DRAWN BY: ENG	DATE: 07/15/04

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HUNTER

ENGINE OPERATING INSTRUCTIONS:

① FILL DIESEL TANK WITH DIESEL FUEL

② CHECK ENGINE OIL LEVEL (SEE YANMAR MANUAL)

③ OPEN ENGINE RAW WATER PICKUP SEACOCK

④ TURN ON "MAIN D.C. SWITCH" OR "START BATTERY SELECTOR SWITCH"

⑤ TURN KEY TO START POSITION, RELEASE WHEN ENGINE STARTS
NOTE" IF ENGINE APPEARS TO HAVE TROUBLE STARTING, SEE YANMAR MANUAL

⑥ TO SHUT ENGINE DOWN: PUSH RED BUTTON AT KEY SWITCH PANEL
UNTIL ENGINE STOPS RUNNING THEN TURN KEY TO OFF POSITION.

WARNING: DO NOT LEAVE AFT HATCHES/ PORTS OPEN WHILE ENGINE IS RUNNING. THERE EXISTS A POSSIBILITY OF EXHAUST POISONING, OR EVEN DEATH.

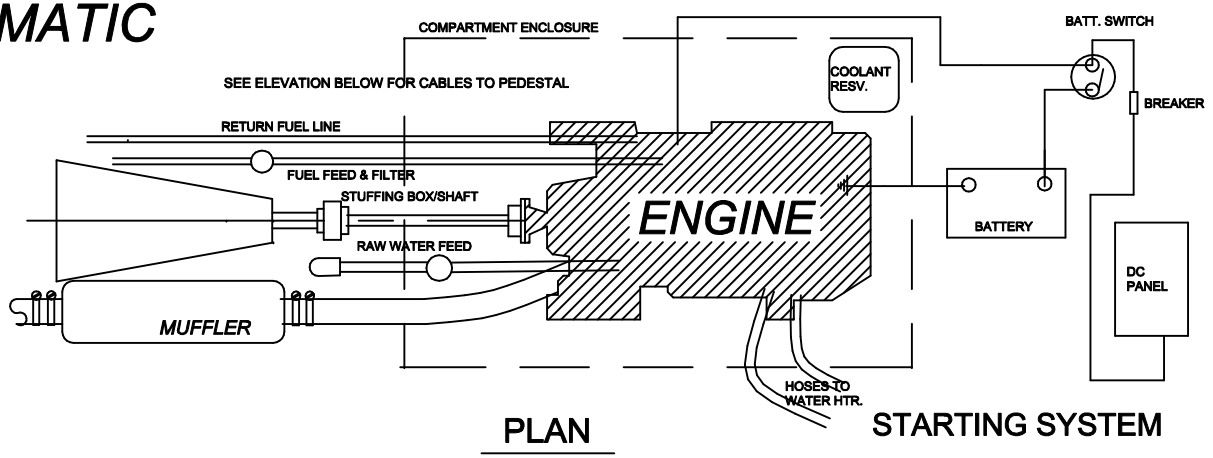
DRAWING TITLE: ENGINE SYSTEM OPERATION	
DRAWING NO. 278051A	REVISION NO. NONE
DRAWN BY: ENG	DATE: 07/15/04

This document discloses information for which HUNTER MARINE CORP. has proprietary rights.

HUNTER

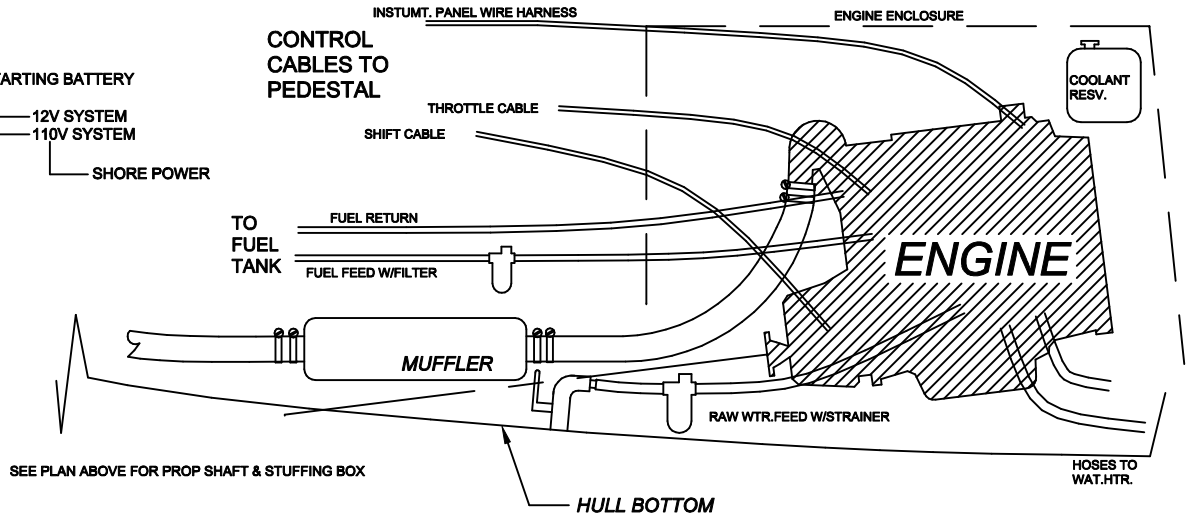
SYSTEMS SCHEMATIC

- ENGINE
  - WATER INTAKE
    - THRU-HULL
    - SEA COCK
    - STRAINER
  - EXHAUST
    - ELBOW
    - HOSE
    - MUFFLER
  - FUEL SYSTEM
    - FEED
    - RETURN
    - TANK
      - FILTER
      - VALVE @ TANK
  - RUNNING GEAR
    - SHAFT
    - COUPLING
    - DRIPLESS
  - CONTROLS
    - SHIFT
    - THROTTLE
    - PANEL HARNESS
- ELECTRICAL SYSTEM
  - BATT SW
    - STARTING BATTERY
      - 12V SYSTEM
      - 110V SYSTEM
        - SHORE POWER



PLAN

STARTING SYSTEM



ELEVATION

NOTE: THIS DWG. IS SCHEMATIC FORM SEE SPECIFIC SYSTEM DWGS. FOR BATTERIES/SWITCHES/ CHARGER ETC. LOCATIONS AND WIRE RUNS.

PAGE 51B-1

DRAWING TITLE: ENGINE COMPARTMENT LAYOUT-SHAFT DRIVE	
DRAWING NO. 278051B-1	REVISION NO. NONE
DRAWN BY: ENG	DATE: 07/15/04

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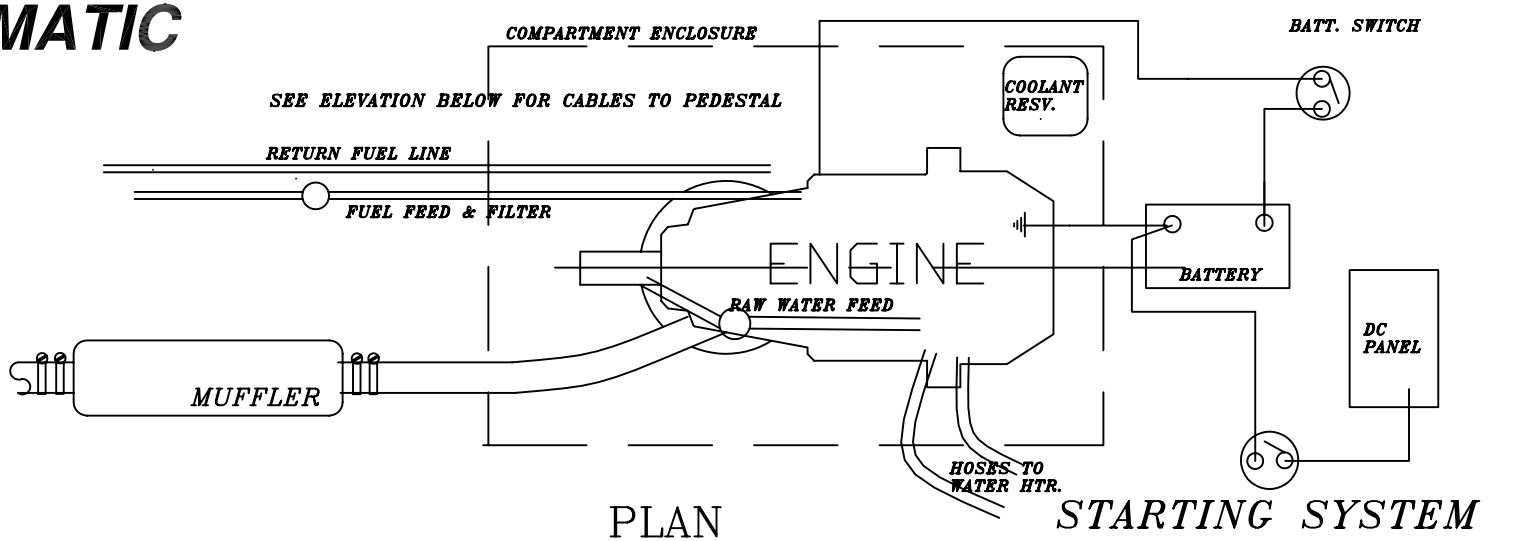
HUNTER

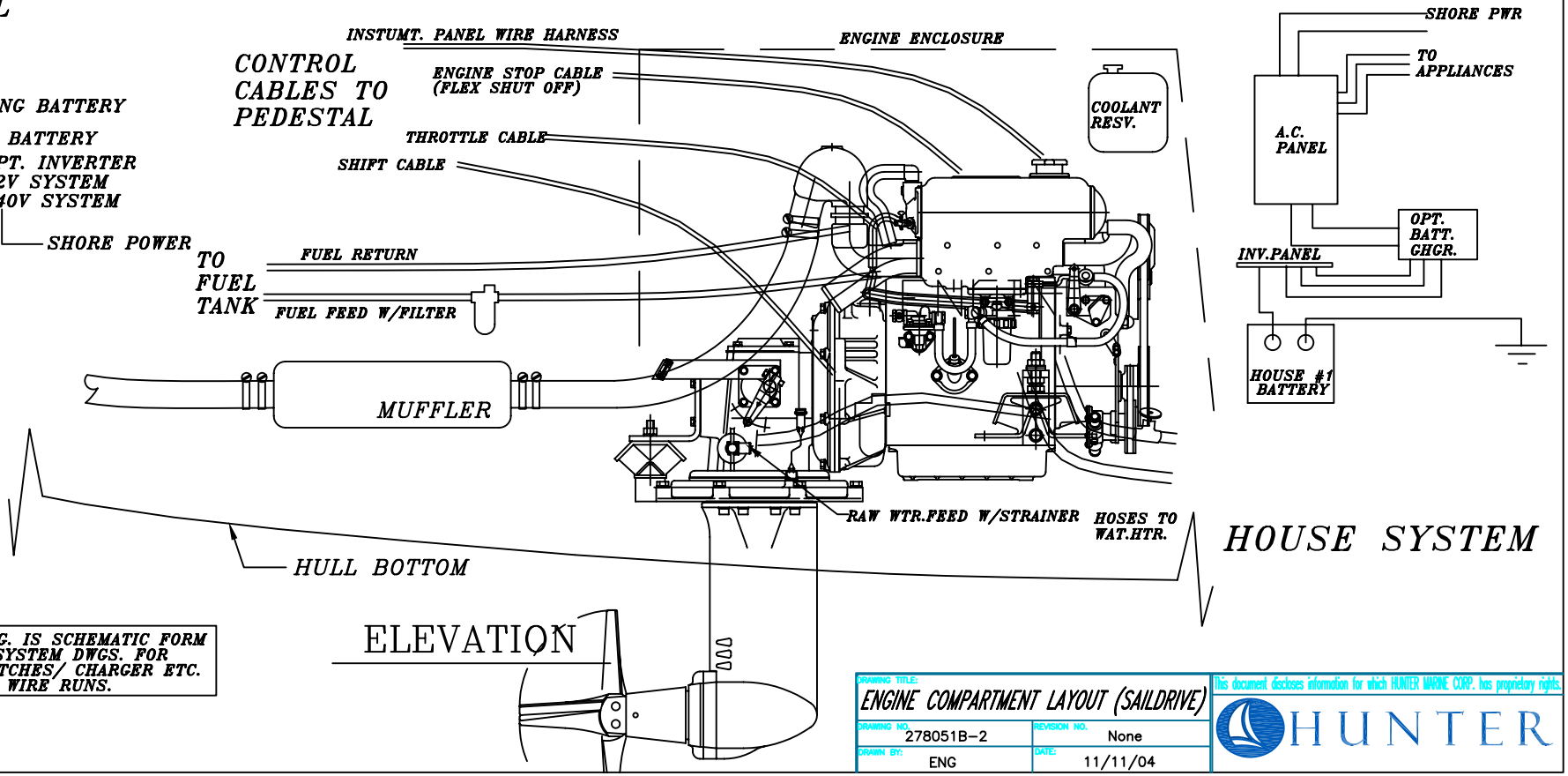
SYSTEMS SCHEMATIC

- ENGINE
  - WATER INTAKE
    - GEAR CASING
    - SEA COCK
    - STRAINER
  - EXHAUST
    - ELBOW
    - HOSE
    - MUFFLER
  - FUEL SYSTEM
    - FEED
    - RETURN
    - TANK
      - FILTER
      - VALVE @ TANK
- RUNNING GEAR
  - UPPER GEAR CASE
  - LOWER GEAR CASE
  - DIAPHRAGMS A & B
- CONTROLS
  - SHIFT
  - THROTTLE
  - PANEL HARNESS
- ELECTRICAL SYSTEM
  - BATT SW
    - STARTING BATTERY
    - HOUSE BATTERY
      - OPT. INVERTER
      - 12V SYSTEM
      - 240V SYSTEM
        - SHORE POWER



PLAN

STARTING SYSTEM



ELEVATION

HOUSE SYSTEM

NOTE: THIS DWG. IS SCHEMATIC FORM SEE SPECIFIC SYSTEM DWGS. FOR BATTERIES/SWITCHES/ CHARGER ETC. LOCATIONS AND WIRE RUNS.

PAGE 51B-2

DRAWING TITLE:	ENGINE COMPARTMENT LAYOUT (SAILDRIVE)
DRAWING NO.	278051B-2
REVISION NO.	None
DRAWN BY:	ENG
DATE:	11/11/04

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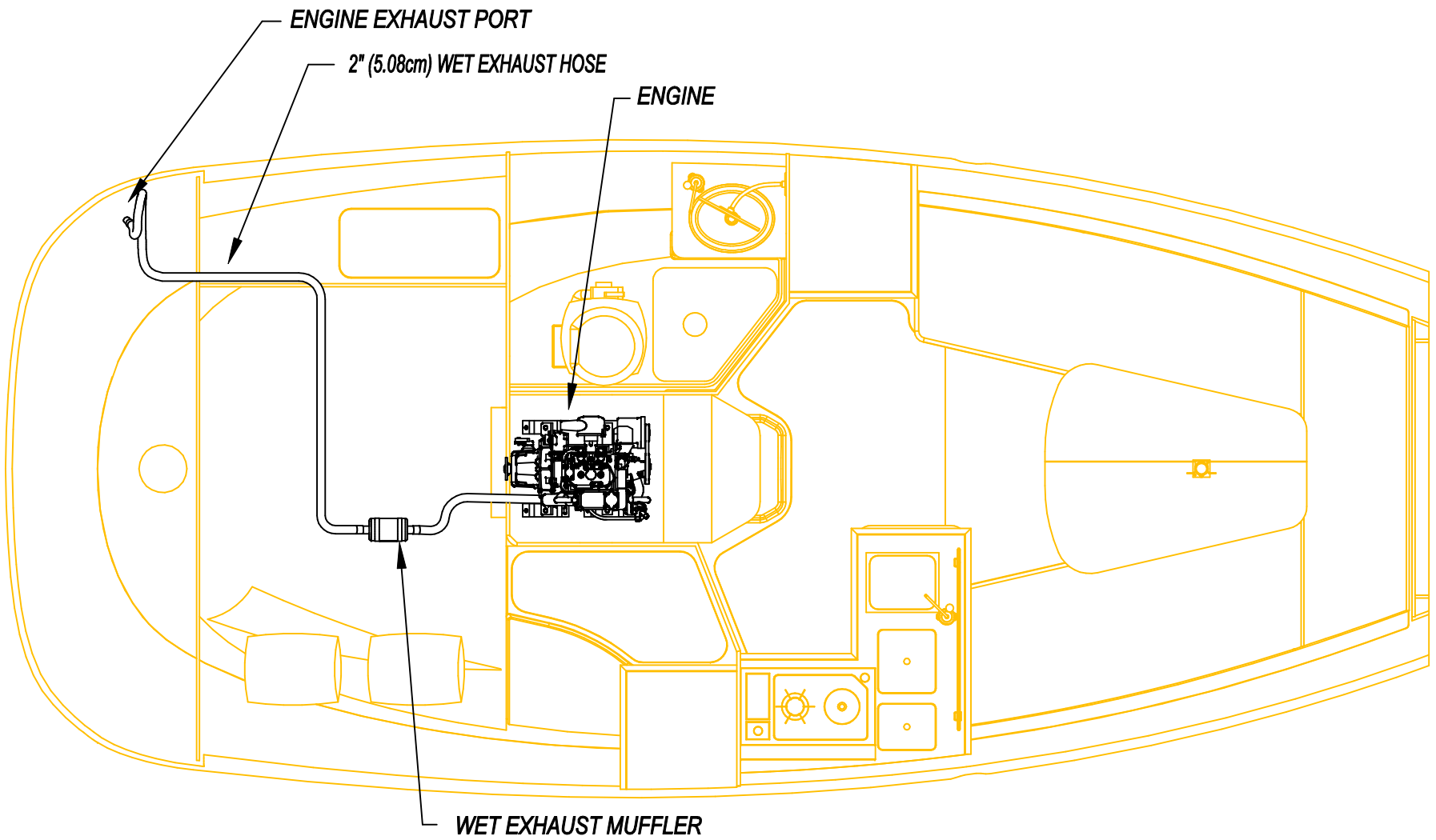
HUNTER



PAGE 51C

DRAWING TITLE: EXHAUST SYSTEM LAYOUT	
DRAWING NO. 278051C	REVISION NO. None
DRAWN BY: ENG	DATE: 07/15/04

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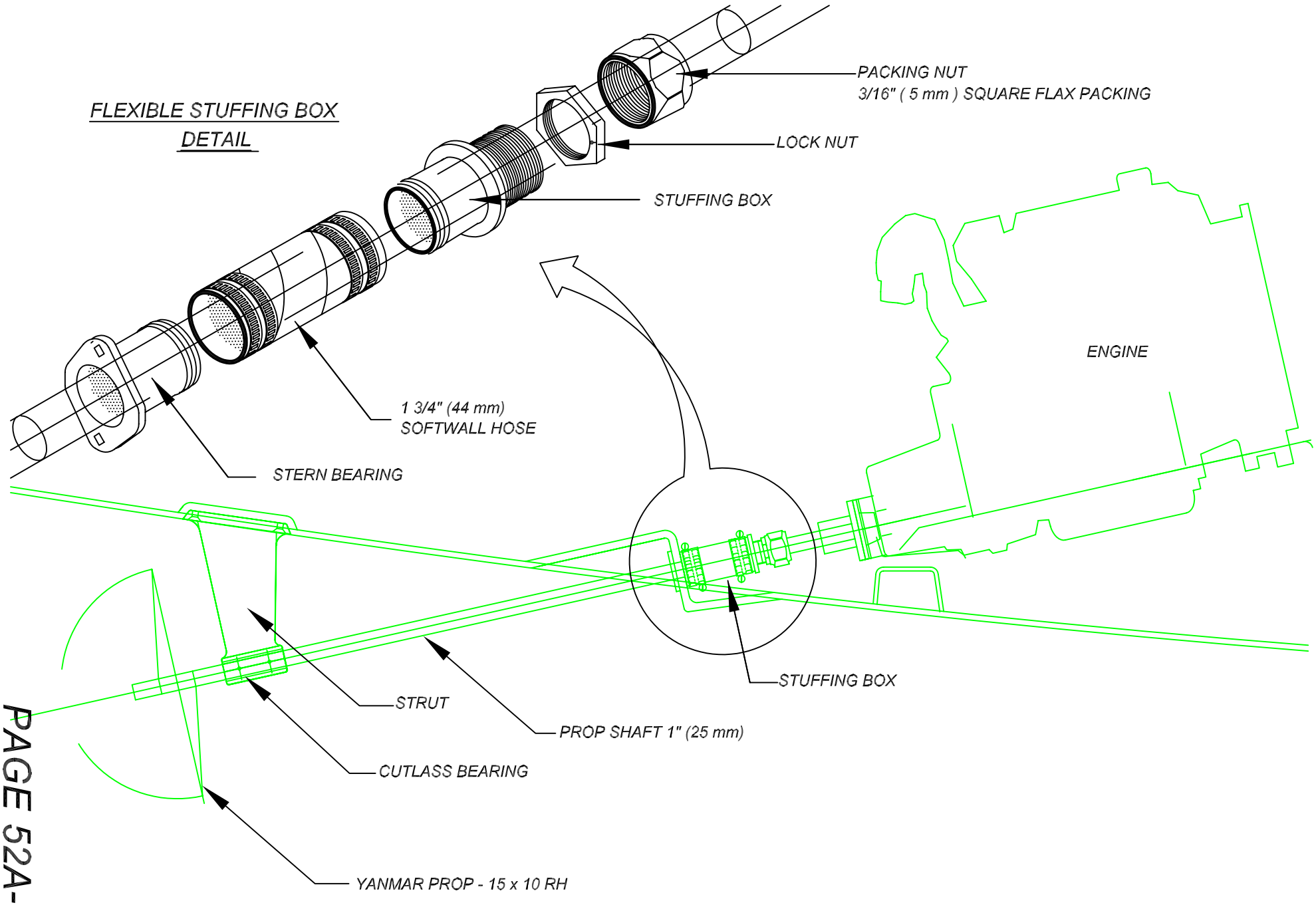

PAGE 52A-1

DRAWING TITLE: STUFFING BOX DETAIL	
DRAWING NO.: 278052A-1	REVISION NO.: NONE
DRAWN BY: ENG	DATE: 07/15/04

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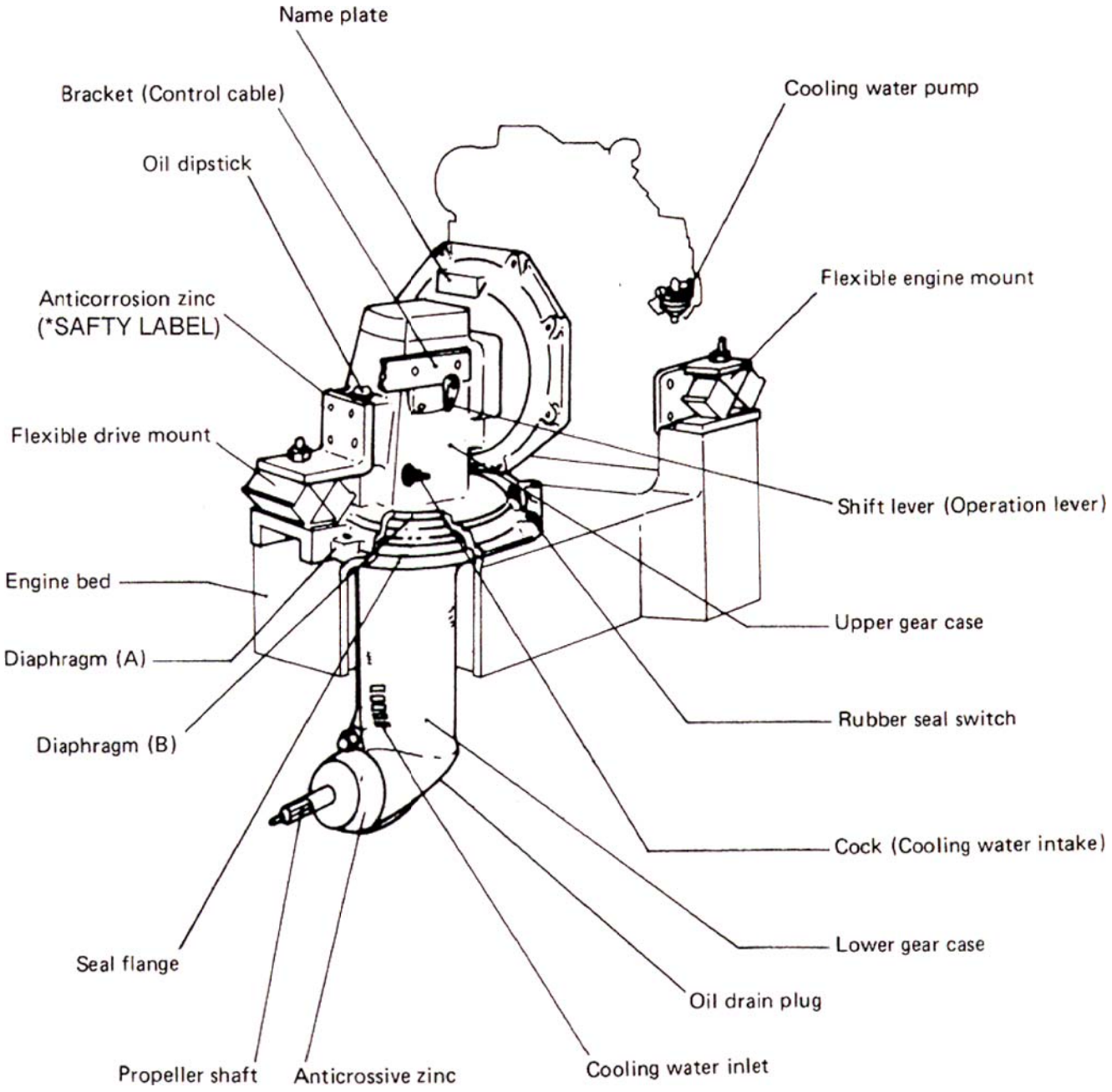

DRAWING TITLE: SAILDRIVE PARTS (SAILDRIVE)	
DRAWING NO. 3328052-A2	REVISION NO. None
DRAWN BY: ENG	DATE: 9/01/04

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HUNTER

FRESH WATER SYSTEM OPERATION (AVAILABLE ON THE CRUISING VERSION ONLY):

1. FILL TANK WITH FRESH WATER (SEE PAGE 53B FOR FILL LOCATION)
2. OPEN ISOLATOR VALVE (SEE PAGE 53B FOR LOCATION)
3. TURN BATTERY SELECTOR SWITCH TO THE "ON" POSITION
   "FLIP" MAIN PANEL BREAKER @ BATTERY SWITCH TO THE "ON" POSITION
   (PANEL LOCATED AT THE ENGINE BOX)
4. TURN ON "WATER PRESSURE" SWITCH ON MAIN SWITCH PANEL
5. "HOT WATER" IS ATTAINABLE BASICALLY IN TWO WAYS...
   - A. BY HEATING THE WATER THRU THE ENGINE HEAT EXCHANGER UNIT
   - B. BY SUPPLYING 120 V.A.C.(240 V.A.C. EUROPEAN) BY "DOCKSIDE SHORE POWER".
6. TO HEAT BY "ENGINE" SEE PAGE 51A FOR ENGINE OPERATING INSTRUCTIONS.
7. TO HEAT BY "SHORE POWER"
   - A. HOOK UP SHORE POWER CABLE
   - B. TURN ON A.C. MAIN BREAKER ON MAIN BREAKER PANEL
   - C. TURN ON "WATER HEATER" BREAKER ON MAIN BREAKER PANEL

NOTE: AS WITH ALL WATER HEATERS, BE SURE THE UNIT IS FILLED WITH WATER BEFORE APPLYING POWER TO UNIT, TO AVOID DAMAGE TO HEATING ELEMENT

DRAWING TITLE:	WATER SYSTEM OPERATION
DRAWING NO.	278053A
REVISION NO.	NONE
DRAWN BY:	ENG
DATE:	07/15/04

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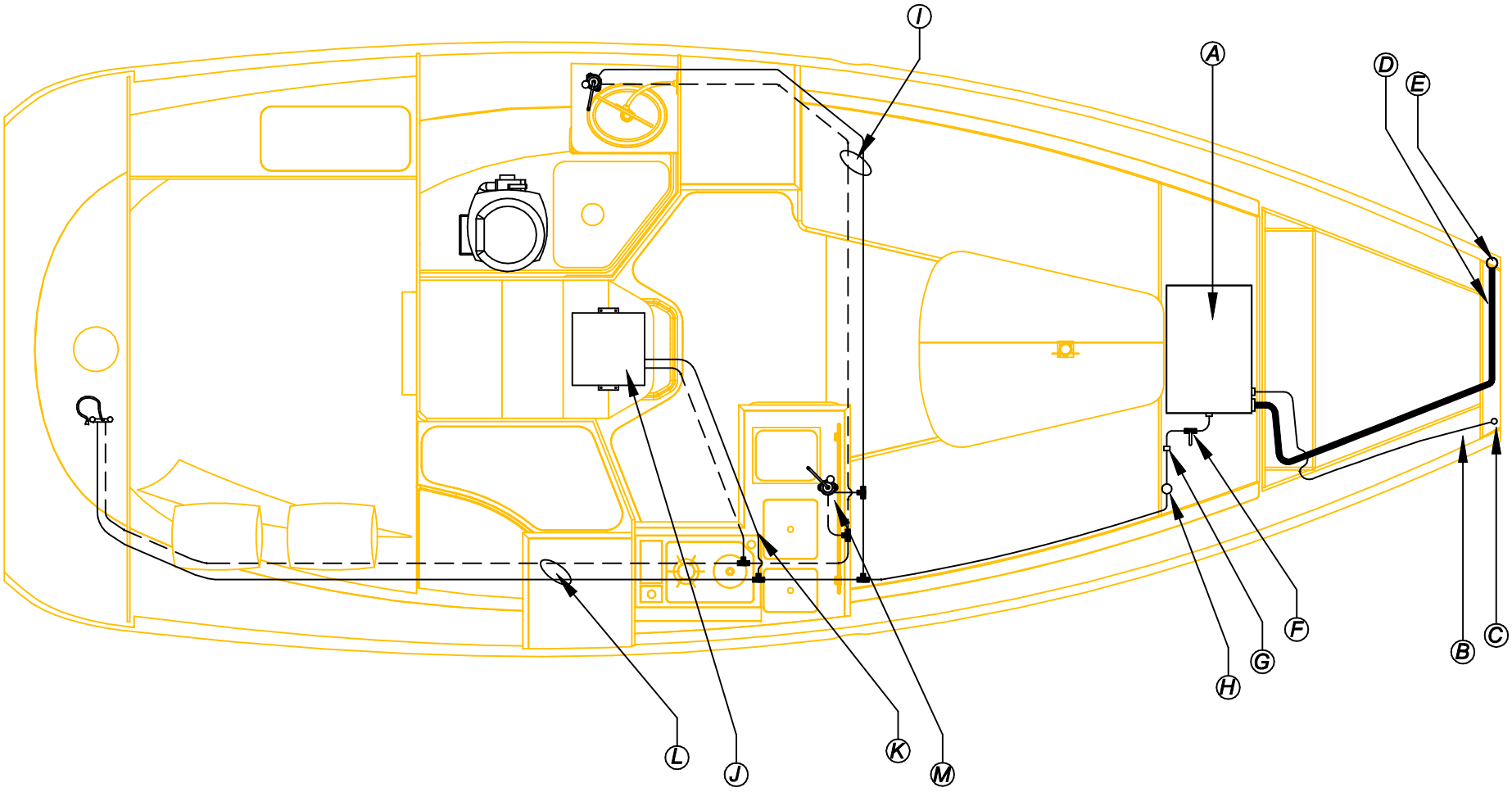
HUNTER

(A) WATER TANK	(F) SHUT OFF VALVE	(J) WATER HEATER
(B) TANK VENT HOSE	(G) WATER FILTER	(K) COLD LINE TO WATER HEATER
(C) TANK VENT	(H) WATER PUMP	(L) HOT & COLD LINES TO COCKPIT SHOWER
(D) TANK FILL HOSE	(I) HOT & COLD LINES TO HEAD	(M) HOT & COLD LINES TO GALLEY SINK
(E) TANK FILL		

ALL WATER LINES ARE 15mm TUBING (10mm U.K.)

TANK VENT HOSE IS 5/8" (16mm)

TANK FILL HOSE IS 1-1/2" (38mm)



COLD WATER LINE ——————————

HOT WATER LINE – – – – – – – –

PAGE 53B

DRAWING TITLE: FRESH WATER SYSTEM LAYOUT

DRAWING NO. 278053B | REVISION NO. None

DRAWN BY: ENG | DATE: 07/15/04

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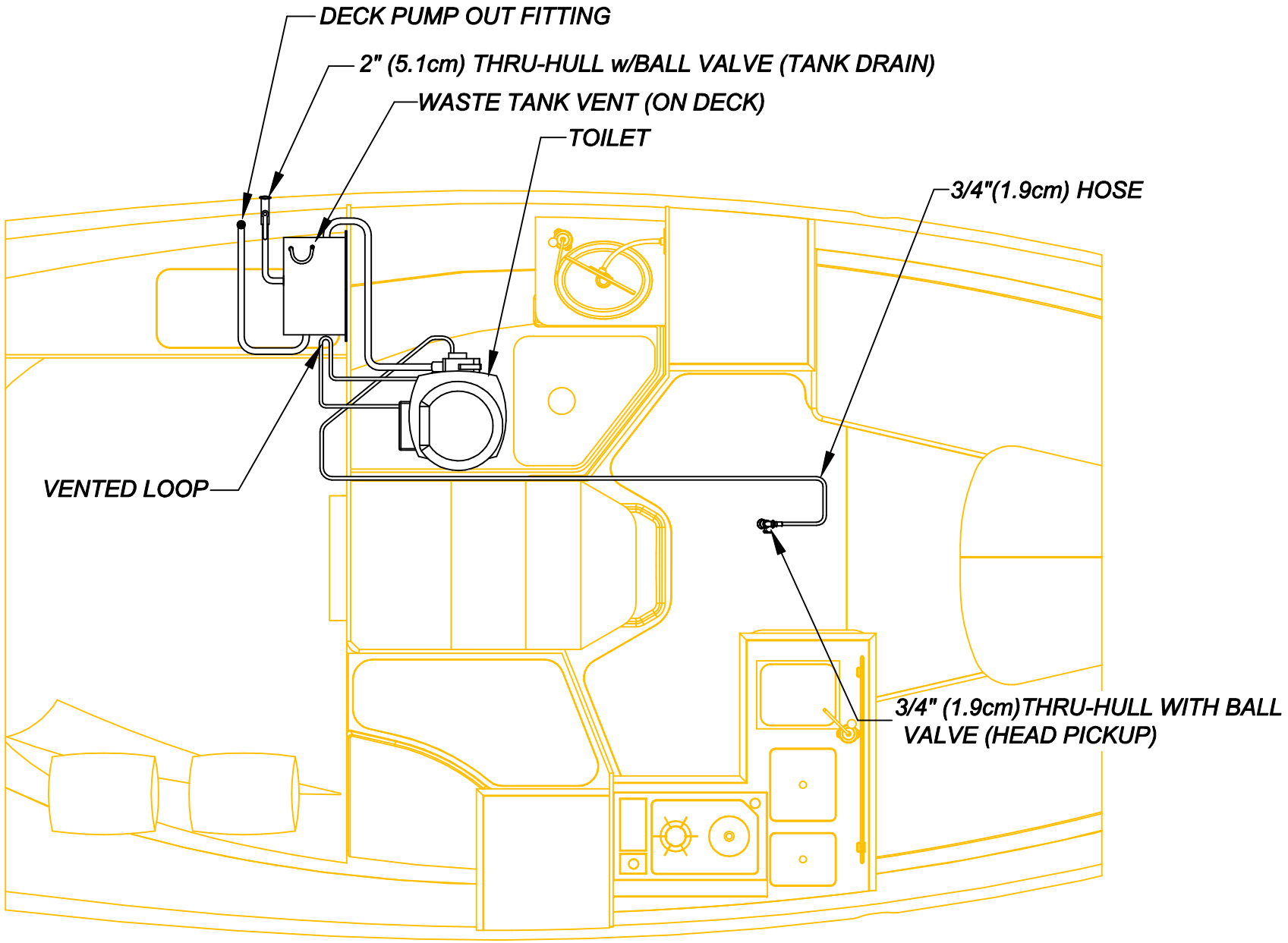
HUNTER



DRAWING TITLE: OPTIONAL WASTE SYSTEM LAYOUT

DRAWING NO. 278054 | REVISION NO. None

DRAWN BY: | DATE: 07/15/04

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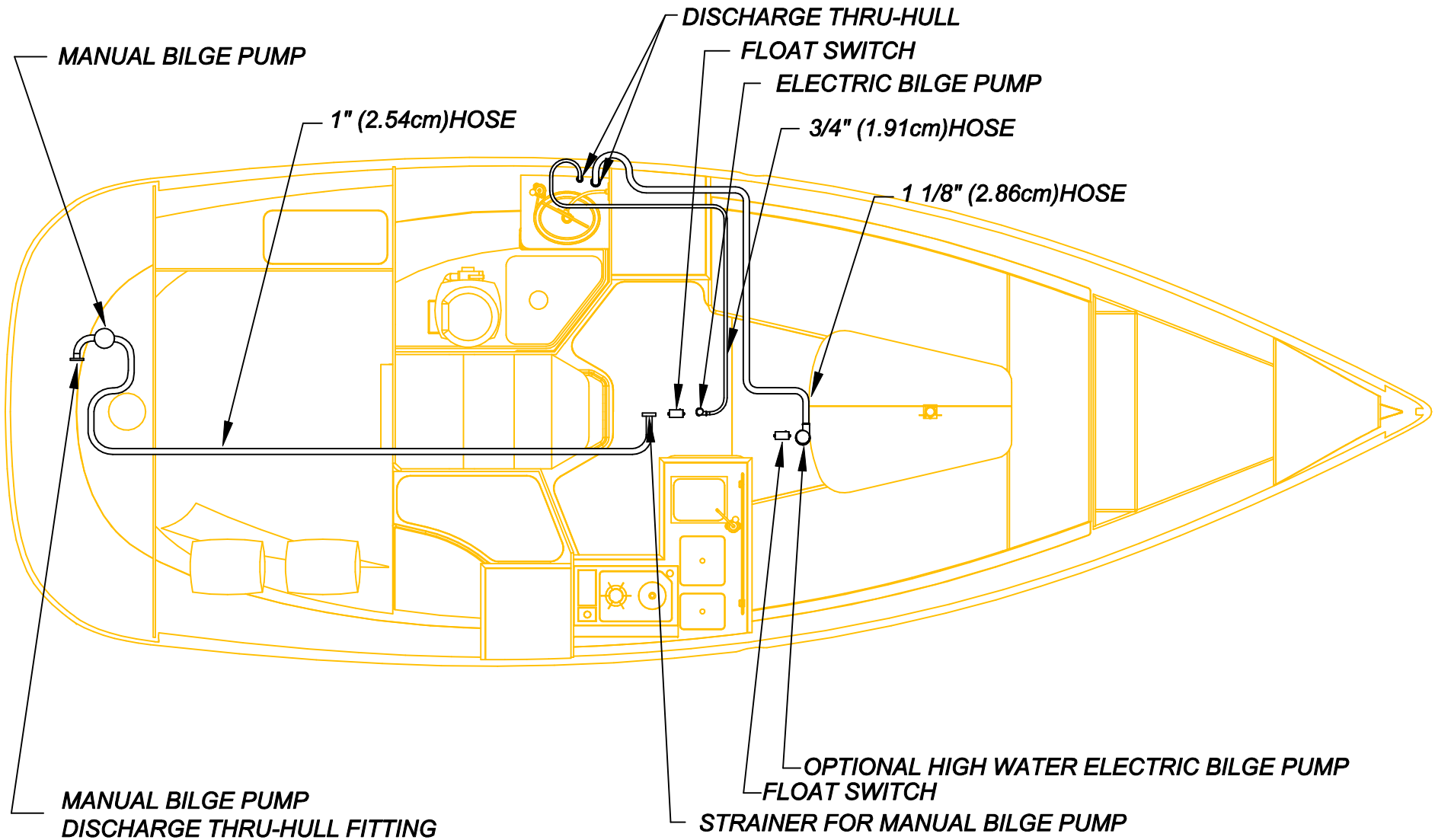

PAGE 55A

DRAWING TITLE: BILGE PUMP LAYOUT	
DRAWING NO. 278055A	REVISION NO. None
DRAWN BY: ENG	DATE: 07/15/04

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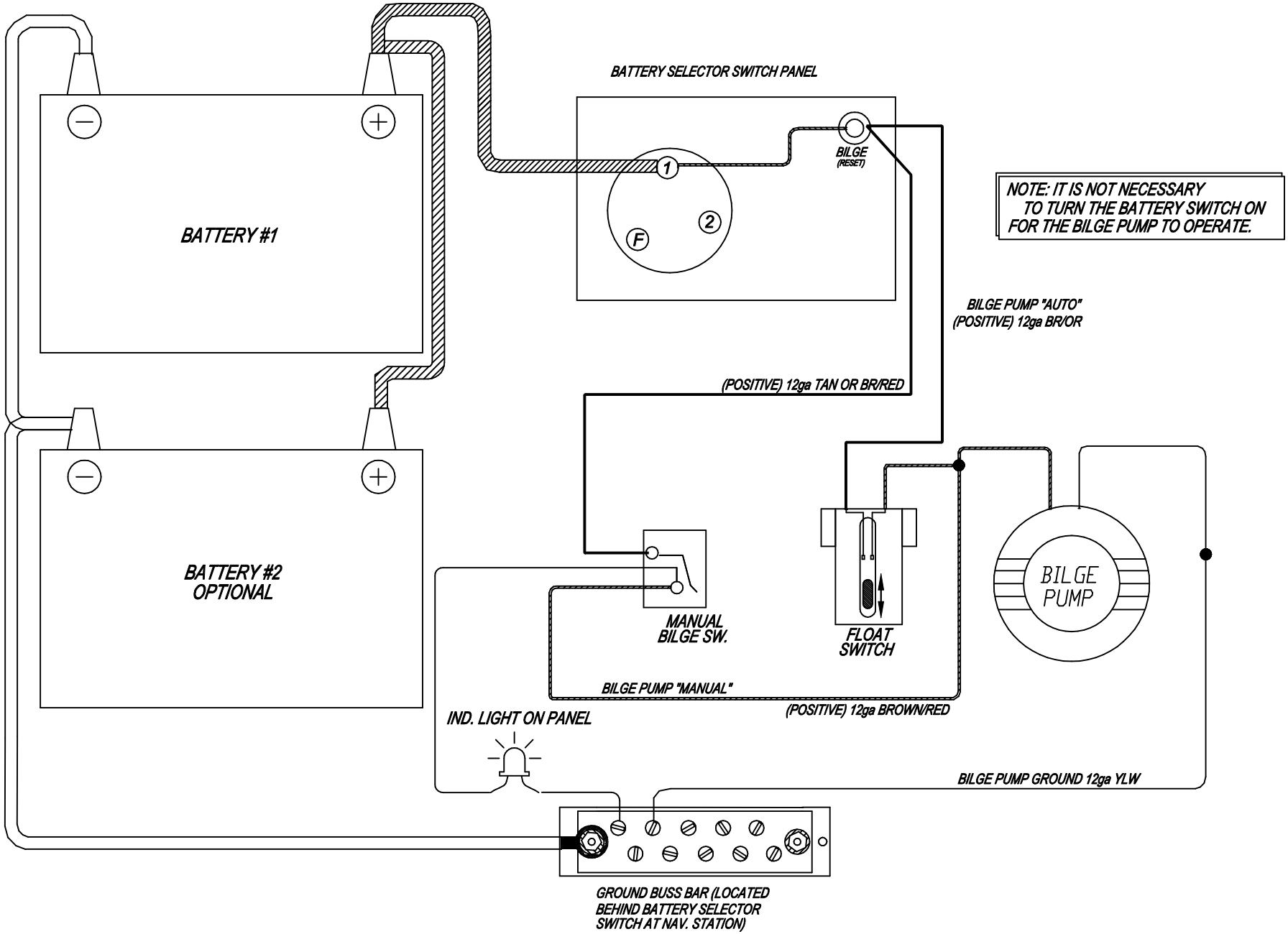
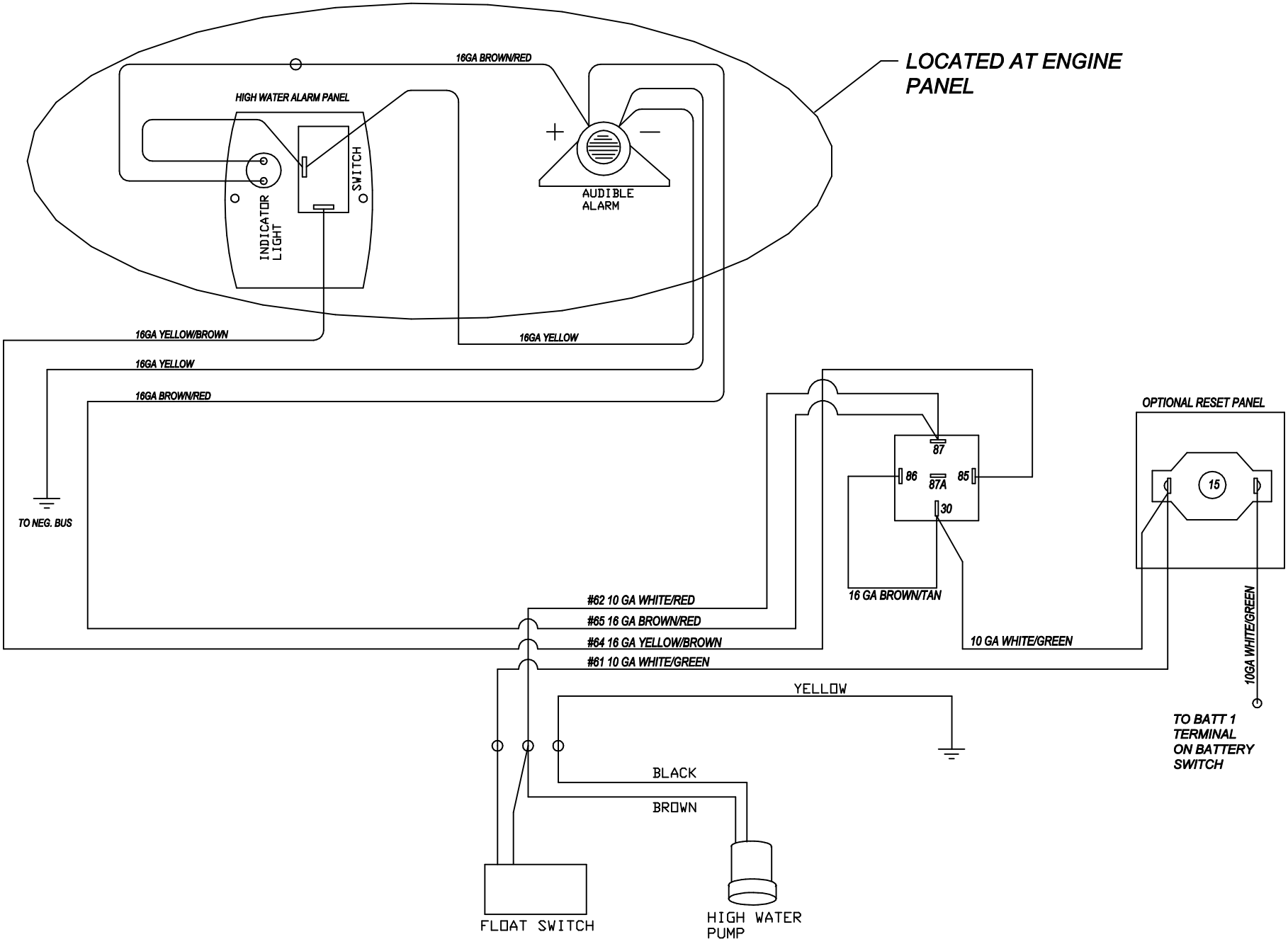


PAGE 55B

DRAWING TITLE: ELECTRIC BILGE PUMP SCHEMATIC	This document discloses information for which HUNTER MARINE CORP. has proprietary rights.
DRAWING NO. 278055B	REVISION NO. NONE
DRAWN BY: ENG	DATE: 07/15/04

HUNTER



PAGE 55C

DRAWING TITLE: OPTIONAL HIGH WATER BILGE PUMP SCHEMATIC	This document discloses information for which HUNTER MARINE CORP. has proprietary rights.
DRAWING NO.: 278055B	REVISION NO.: NONE
DRAWN BY: ENG	DATE: 07/15/04

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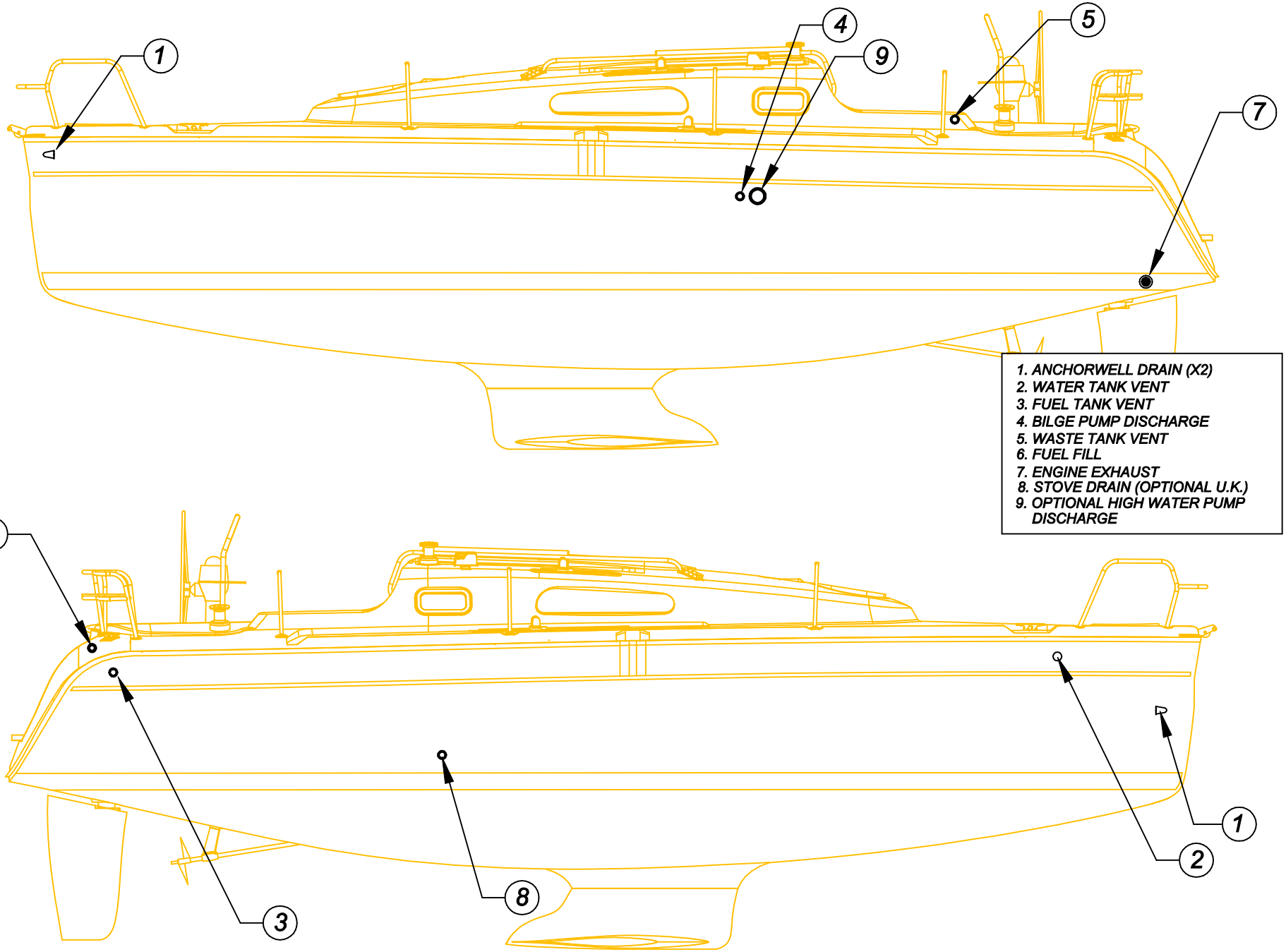

1. ANCHORWELL DRAIN (X2)
2. WATER TANK VENT
3. FUEL TANK VENT
4. BILGE PUMP DISCHARGE
5. WASTE TANK VENT
6. FUEL FILL
7. ENGINE EXHAUST
8. STOVE DRAIN (OPTIONAL U.K.)
9. OPTIONAL HIGH WATER PUMP DISCHARGE

PAGE 56A-1

DRAWING TITLE: THRU-HULL LOCATIONS	
DRAWING NO. 278056A-1	REVISION NO. None
DRAWN BY: ENG	DATE: 07/15/04

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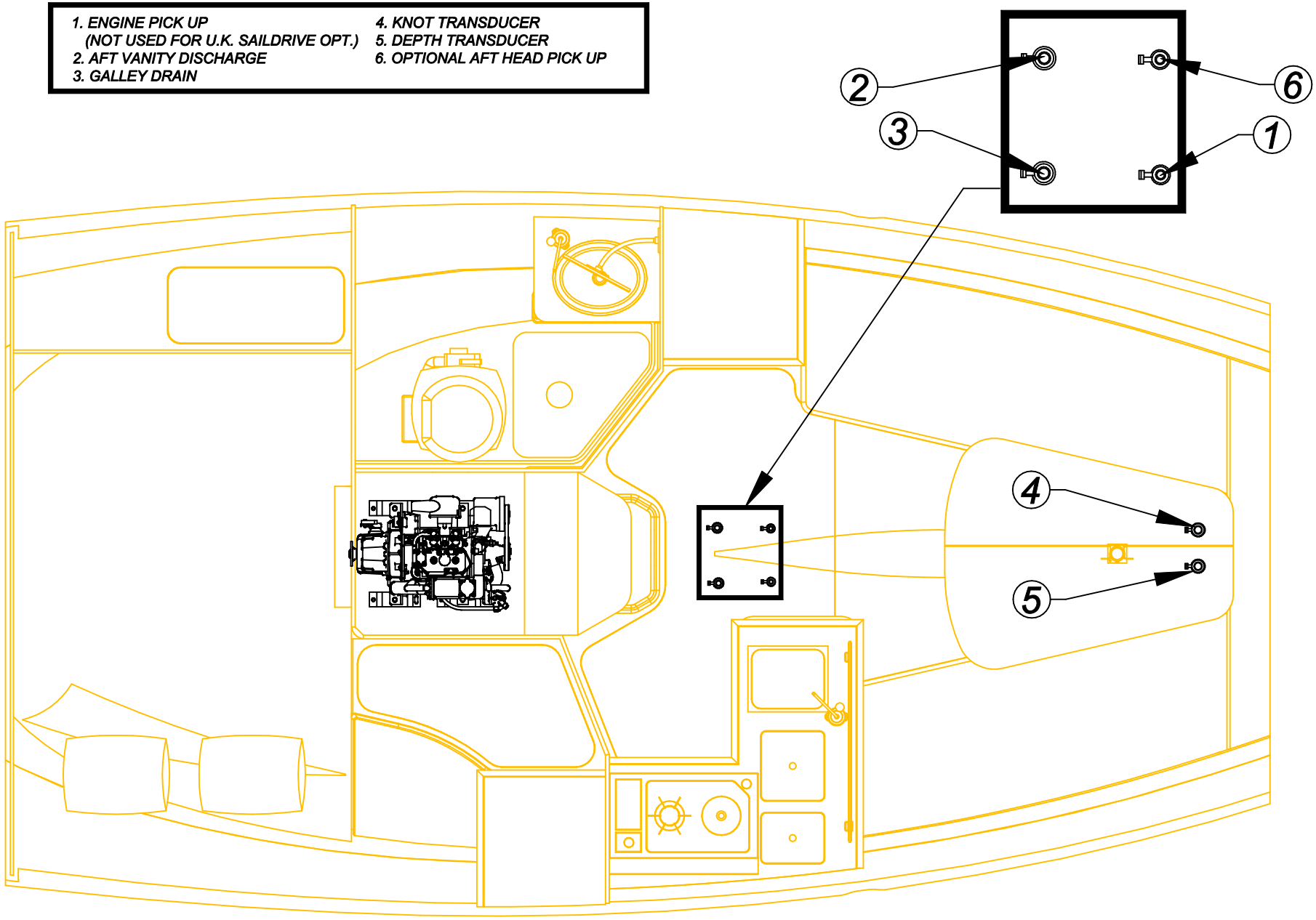
HUNTER

1. ENGINE PICK UP
   (NOT USED FOR U.K. SAILDRIVE OPT.)
2. AFT VANITY DISCHARGE
3. GALLEY DRAIN
4. KNOT TRANSDUCER
5. DEPTH TRANSDUCER
6. OPTIONAL AFT HEAD PICK UP



PAGE 56A-2

DRAWING TITLE: THRU-HULL LOCATIONS	
DRAWING NO. 278056A-2	REVISION NO. None
DRAWN BY: ENG	DATE: 07/15/04

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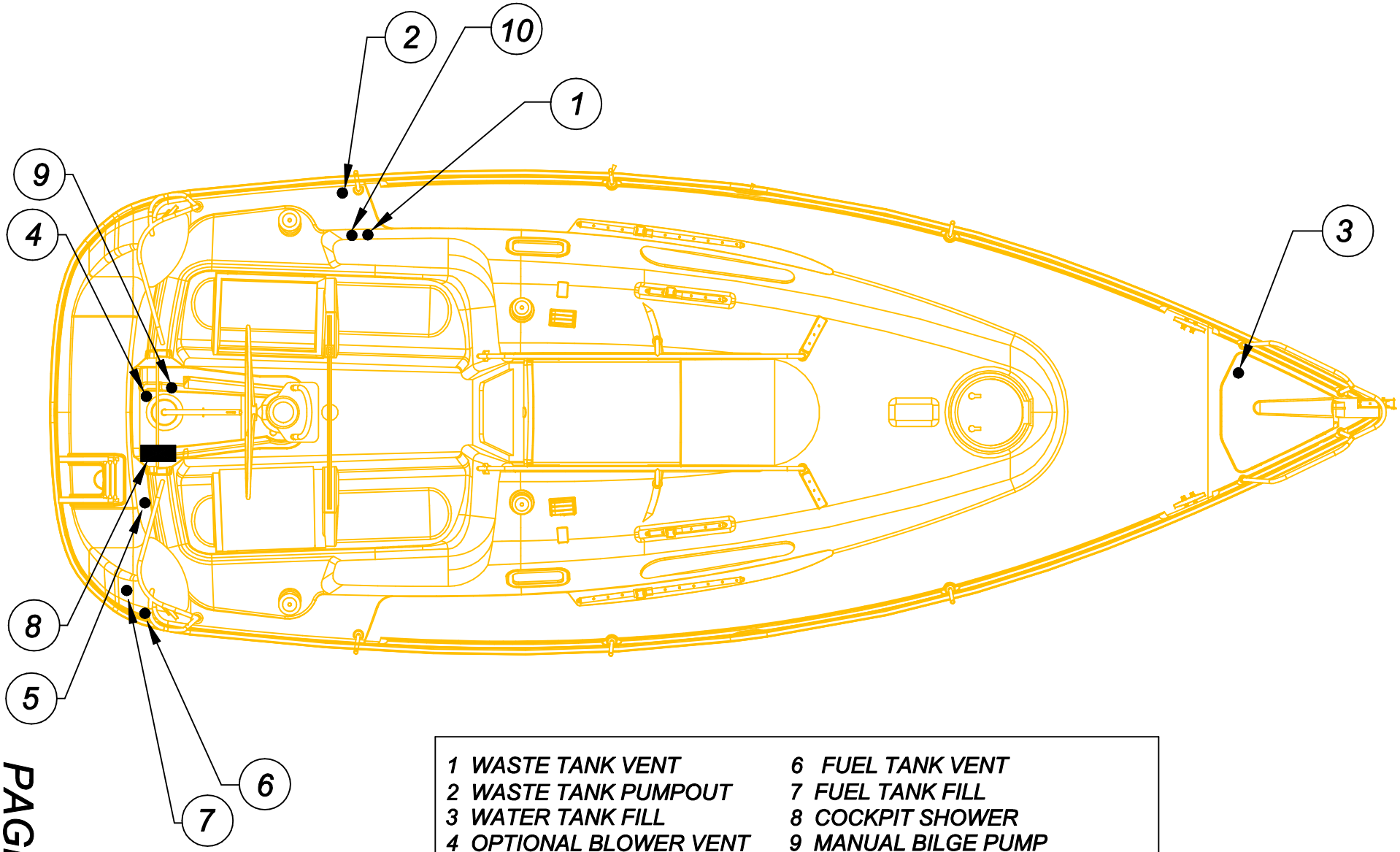

1 WASTE TANK VENT	6 FUEL TANK VENT
2 WASTE TANK PUMPOUT	7 FUEL TANK FILL
3 WATER TANK FILL	8 COCKPIT SHOWER
4 OPTIONAL BLOWER VENT	9 MANUAL BILGE PUMP
5 SHORE POWER	10 BATTERY COMPARTMENT VENT

DRAWING TITLE: THRU-DECK LOCATIONS

DRAWING NO. 278056B	REVISION NO. NONE
DRAWN BY: ENG	DATE: 07/15/04

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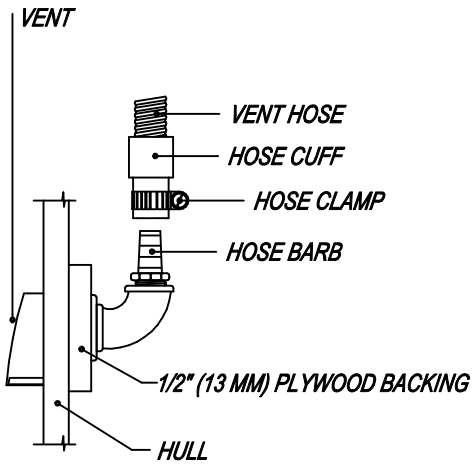
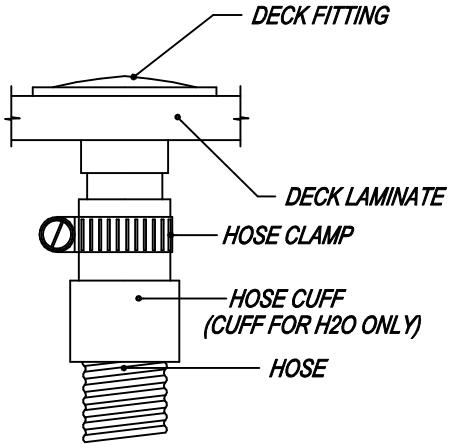
HUNTER

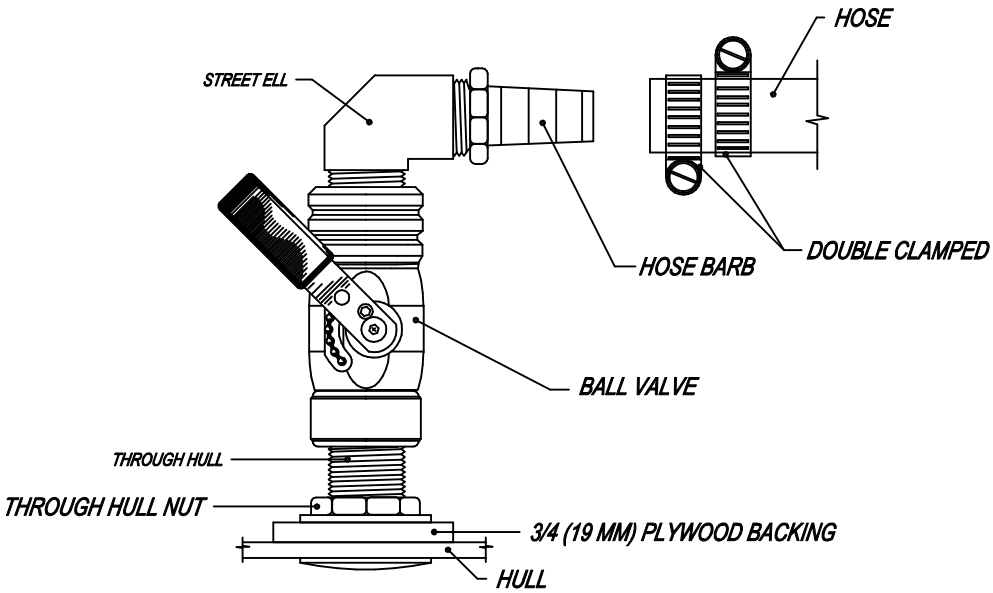
DRAWING TITLE: TYPICAL THRU DECK/THRU HULL FITTINGS
DRAWING NO. 278056C
REVISION NO. NONE
DRAWN BY: ENG
DATE: 07/15/04



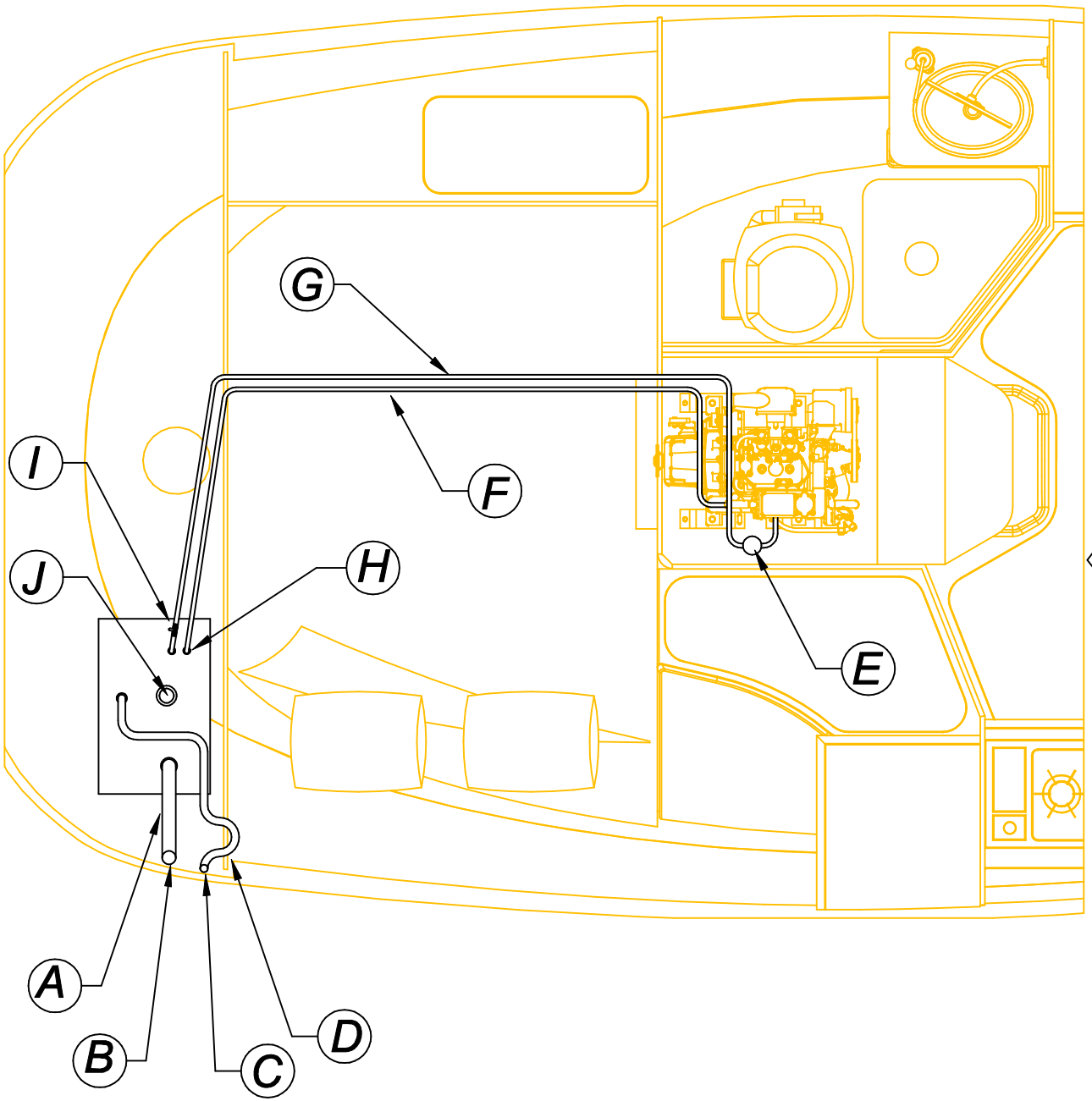
TYP. VENT DETAIL

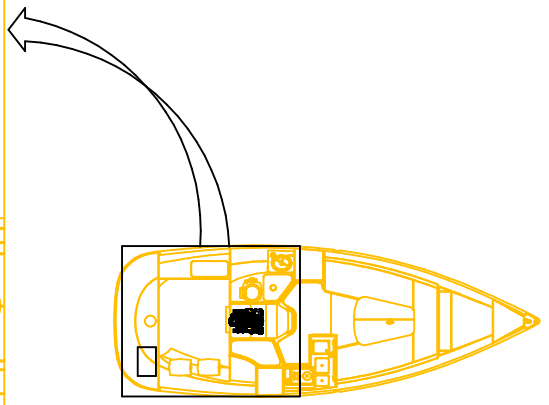


TYP DECK PLATE DETAIL



TYP. THRU-HULL W/ SEACOCK DETAIL





A FUEL FILL HOSE 1-1/2" (3.8cm)
B FUEL FILL (ON DECK)
C FUEL VENT (ON DECK)
D FUEL VENT HOSE 5/8" (1.6cm)
E FUEL FILTER/WATER SEPARATOR
F ENGINE FUEL RETURN LINE 1/4" (.64cm)
G ENGINE FUEL SUPPLY LINE 1/4" (.64cm)
H ENGINE FUEL RETURN PORT
I FUEL CUTOFF VALVES
J FUEL LEVEL SENSOR

DRAWING TITLE: FUEL SYSTEM LAYOUT

DRAWING NO.	REVISION NO.
278057	NONE
DRAWN BY: ENG	DATE: 07/15/04

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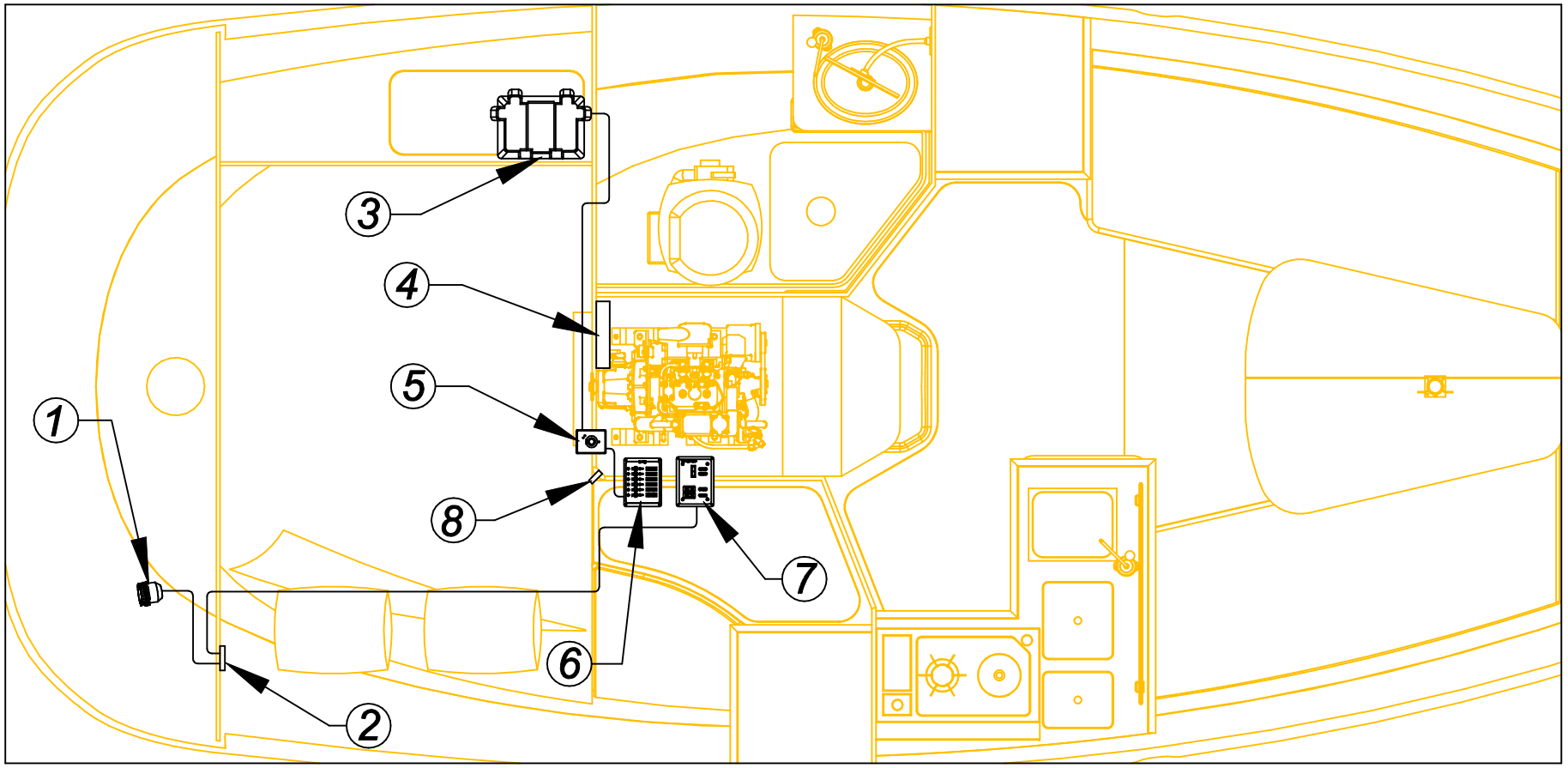
HUNTER

H27 POWER SYSTEMS OPERATION PROCEDURES

POWER SOURCE:	TO OPERATE:
D.C. MAIN	TURN BATTERY SWITCH (LOCATED AT ENGINE BOX) TO THE "ON" POSITION, THEN TURN ON "D.C. MAIN" BREAKERLOCATED ON BATTERY SWITCH PANEL. **IF NO POWER:** CHECK BATTERY CONNECTIONS.
SHORE POWER	1. CONNECT SHORE POWER CABLE TO SUPPLY POWER TO A.C. POWER MAIN DISTRIBUTION PANEL 2. TURN ON SHORE POWER BREAKER ON LOCATED STRBD Q-BERTH. 3. A.C. POWER MAIN DISTRIBUTION PANEL SHOULD NOW BE OPERABLE **IF NO POWER TO PANEL, CHECK THE BREAKER AT THE DOCKSIDE POWER SUPPLY BOX.**
OPT. BATT. CHARGER	1. CONNECT SHORE POWER CABLE AND TURN ON "SHORE POWER " BREAKER 2. TURN "BATTERY CHARGER" BREAKER TO THE "ON" POSITION



1 SHORE POWER POWERS AC PANEL
2 SHORE POWER RESET
3 HOUSE BATTERIES PROVIDE 12V.D.C. VOLTAGE TO DC SIDE OF DISTRIBUTION PANEL.
4 OPTIONAL BATTERY CHARGER.
5 BATTERY SWITCH PANEL
6 D.C. PANEL
7 A.C. PANEL
8 NEGATIVE BUS

NOTE:

BE SURE THE BATTERY SELECTOR SWITCH ON THE BATTERY CHARGER IS IN THE PROPER POSITION FOR YOUR BATTERY TYPE

PAGE 58A-2

DRAWING TITLE: BASIC POWER SUPPLY SYSTEM LAYOUT	
DRAWING NO. 278058A-2	REVISION NO. None
DRAWN BY: ENG	DATE: 07/15/04

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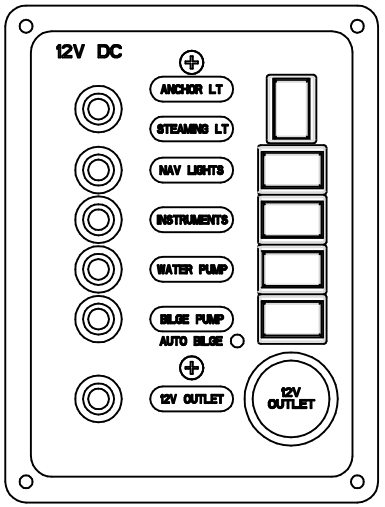
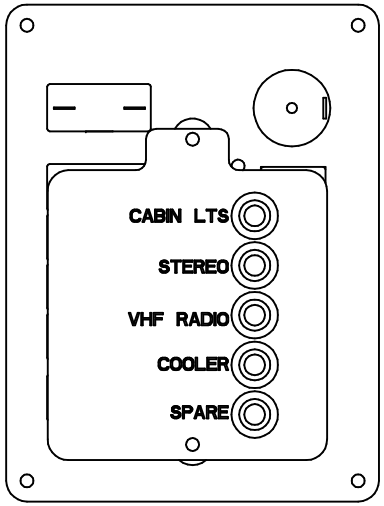
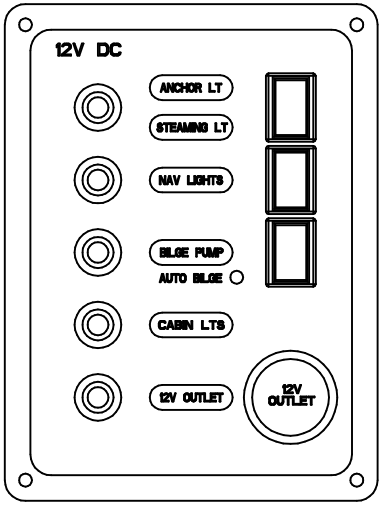
HUNTER

CRUISING VERSION D.C. PANEL

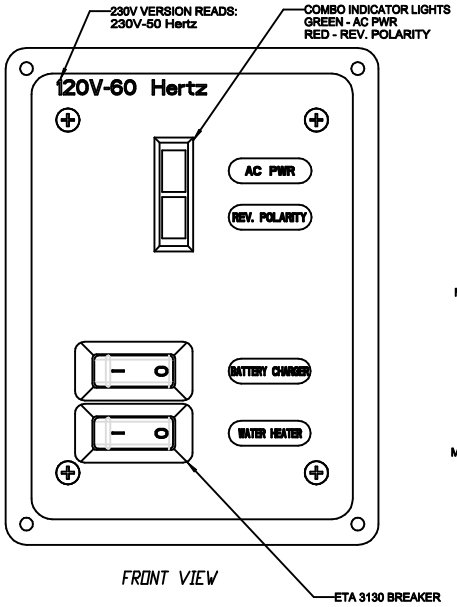


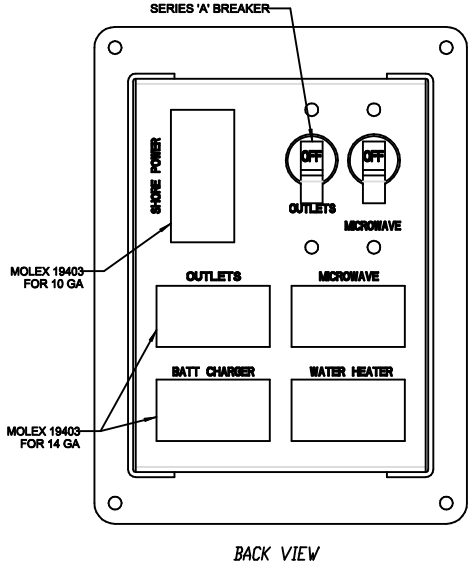


BASE VERSION D.C. PANEL

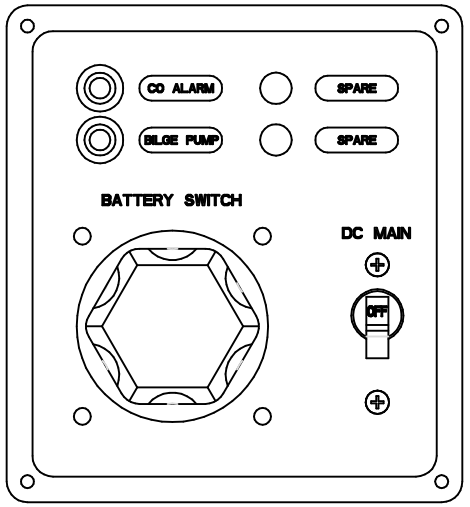


CRUISING VERSION A.C. PANEL





BATTERY SWITCH PANEL



PAGE 58A-3

DRAWING TITLE: MAIN ELECTRIC PANEL		This document discloses information for which HUNTER MARINE CORP. has proprietary rights.
DRAWING NO. 278058A-3	REVISION NO. None	HUNTER
DRAWN BY: ENG	DATE: 07/15/04	

H27 12 V.D.C. DISTRIBUTION PANEL

RESETS / SWITCHES	DESCRIPTION
CABIN LIGHTS	SUPPLIES POWER TO ALL INTERIOR LIGHTS AND COCKPIT LIGHT
STEREO	SUPPLIES POWER TO STEREO UNIT
WATER PUMP	SUPPLIES POWER TO FRESH WATER PUMP TO PRESSURIZE WATER SYSTEM.
COOLER	SUPPLIES POWER TO COOLER.
ANCHOR LIGHT	SUPPLIES POWER TO 360 DEGREE LIGHT AT TOP OF MAST, USE WHEN ANCHORED AT NIGHT.
STEAMING LIGHT	SUPPLIES POWER TO STEAMING LIGHT LOCATED ON FWD. SIDE OF MAST APPROXIMATELY AT THE HEIGHT OF SPREADERS. USE AT NIGHT (WITH RUNNING LIGHTS) WHEN VESSEL UNDERWAY BY ENGINE POWER.
VHF RADIO	SUPPLIES POWER TO THE VHF RADIO
INSTRUMENTS	SUPPLIES POWER TO DEPTH, & SPEED REPEATERS LOCATED ON HELM CONSOLE.
BILGE PUMP	PUSH SWITCH AND HOLD TO OPERATE BILGE PUMP. ILLUMINATED LIGHT INDICATES POWER TO PUMP. NOTE: THERE IS NO DISCONNECT SWITCH FOR AUTOMATIC FLOAT SWITCH. THERE IS ALWAYS POWER TO FLOAT SWITCH AS LONG AS LONG AS THERE IS A GOOD BATTERY INSTALLED.
NAV LIGHTS	SUPPLIES POWER TO THE BOW AND STERN LIGHTS.
12V OUTLET	THESE POWER PLUGS PROVIDED FOR CELLPHONE, LAPTOP COMPUTER, ETC.

120V.A.C. (230V OVERSEAS MODELS) DISTRIBUTION PANEL

SWITCHES	DESCRIPTION
	A.C. PANEL
OUTLETS	PROVIDES A.C. POWER TO THE BOAT'S OUTLETS.
MICROWAVE	SUPPLIES POWER TO OUTLET BEHIND MICRO. IN WHICH MICROWAVE IS PLUGGED INTO AND STOVE TOP.
WATER HEATER	SUPPLIES POWER TO WATER HEATER. **BE SURE TANK IS FULL AND SYSTEM IS FREE FROM AIR BEFORE APPLYING POWER TO HEATER TO PREVENT ELEMENT BURNOUT. NOTE DO NOT TRY TO POWER WATER HEATER OFF OF THE OPTIONAL INVERTER, IT IS NOT CAPABLE OF SUPPLYING ENOUGH POWER TO POWER UNIT.**
BATT. CHARGER	PROVIDES POWER TO BATTERY CHARGER WHICH IN TURN PROVIDES CHARGING POWER TO BATTERIES. NOTE: IF OPTIONAL INVERTER CHOSEN THIS BREAKER IS NOT UTILIZED AND IS AVAILABLE AS A "SPARE" BREAKER. * **SEE BELOW**
	MISC. INFO
LED INDICATORS	ILLUMINATE WHEN A.C. POWER PRESENT.
REV. POLARITY	IF REVERSED POLARITY INDICATOR ILLUMINATES AFTER CONNECTING SHORE POWER HAVE DOCKSIDE POWER CHECKED BY QUALIFIED PERSONELL.

12V.D.C. SYSTEM TROUBLESHOOTING GUIDE

TO POWER D.C. PANEL:	**OPTIONAL BATTERY CHARGER MODEL** TURN (MAIN) BATTERY SWITCH TO
THIS IS TO POWER PANEL	THE "ON" POSITION, THEN TURN ON "D.C. MAIN" BREAKER ON BATTERY SWITCH PANEL PANEL.
FOR CHARGING	**IF NO POWER TO PANEL:** CHECK BATTERY CONNECTIONS.

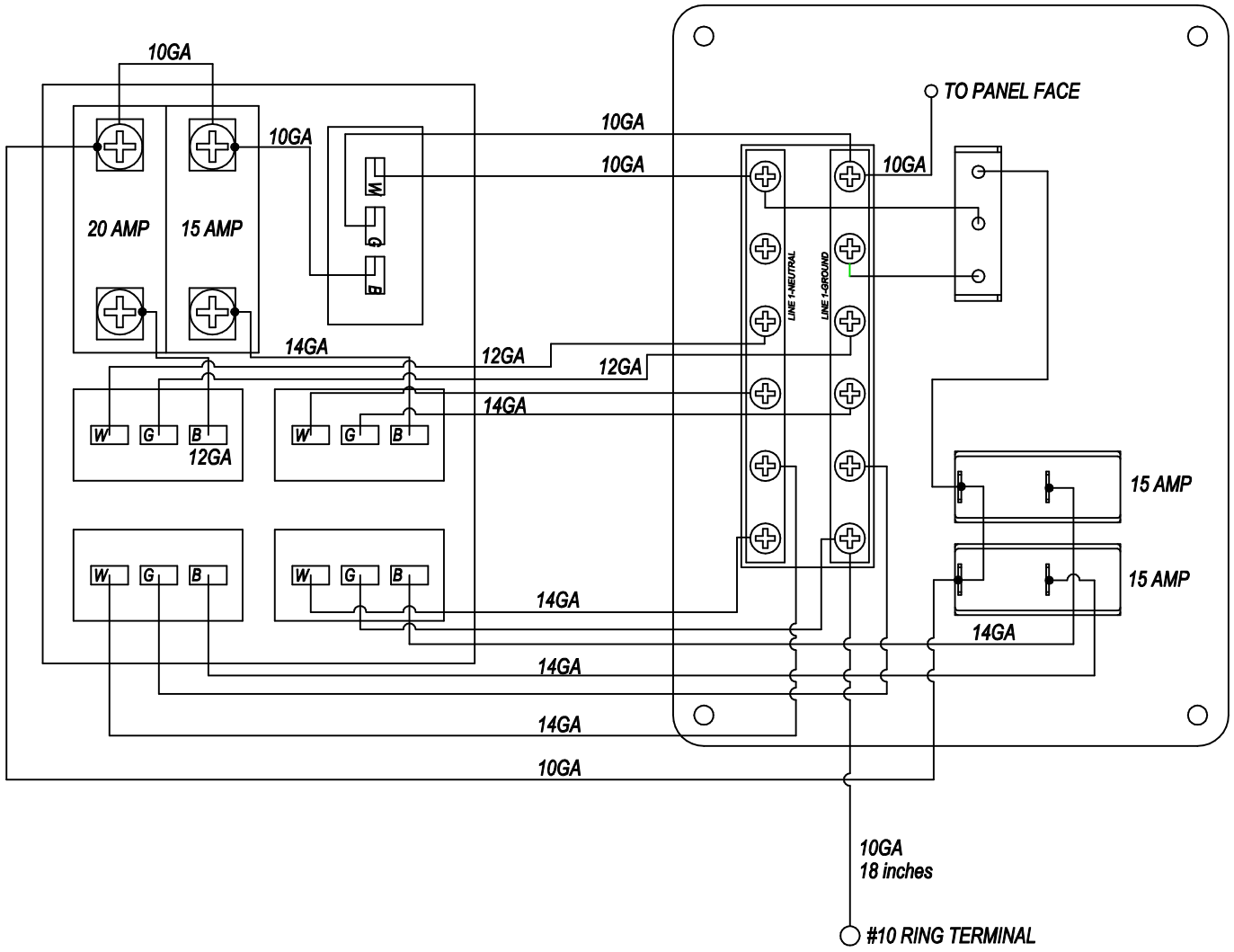
COMPONENT	SYMPTOM	POSSIBLE SOLUTION/S
CABIN LIGHTS	WON'T ILLUMINATE	SEE "TO POWER PANEL" ABOVE BULB/S NEED REPLACING? CHECK RESET. ON DELUXE MODEL, RESET IS LOCATED ON BACK SIDE OF PANEL.
STEREO	WON'T TURN ON STEREO TURNS ON, NO SOUND	SEE "TO POWER PANEL" ABOVE IS STEREO UNIT ON? ARE VOLUME CONTROLS TURNED DOWN? SEE STEREO OWNERS MANUAL CHECK RESET. ON DELUXE MODEL, RESET IS LOCATED ON BACK SIDE OF PANEL.
BILGE PUMP	WON'T OPERATE AUTO OR MANUAL PUMP MAKES NOISE, DOESN'T PUMP PUMP RUNS BUT DOESN'T DISCHARGE	BATTERY LEVEL O.K.? CHECK BILGE RESET ON BATTERY SWITCH PANEL. BATTERY CONNECTIONS GOOD? DEBRIS IN PUMP IMPELLER? DISCHARGE HOSE CLOGGED?
INSTRUMENTS	REPEATERS DON'T OPERATE	SEE "TO POWER PANEL" ABOVE DO TRANSDUCERS NEED CLEANING? CHECK RESET / SEE INSTRUMENTS MANUAL
VHF RADIO	WON'T OPERATE TURNS ON, WON'T TRANSMIT/RECEIVE	SEE "TO POWER PANEL" ABOVE RADIO TURNED ON? ANTENNA CONNECTED PROPERLY? CHECK RESET. ON DELUXE MODEL, RESET IS LOCATED ON BACK SIDE OF PANEL.
ANCHOR, STEAMING, & RUNNING LIGHTS	WON'T ILLUMINATE	SEE "TO POWER PANEL" ABOVE CHECK CONNECTIONS IN ACCESS PANEL TOP OF COMPRESSION POST. BULBS NEED REPLACING?
12 V.D.C.AUX. PLUG	NO POWER PRESENT	CHECK IN-LINE FUSE BACK OF PANEL
COOLER	WILL NOT COOL	CHECK CORD CONNECTION ON COOLER CHECK RESET. ON DELUXE MODEL, RESET IS LOCATED ON BACK SIDE OF PANEL.

NOTE: COMPONENT/S FAILURE COULD ALSO BE THE RESULT OF A POOR "GROUND" CONNECTION.
DUE TO VIBRATION, WEATHER CONDITIONS, ETC. OCCASIONAL INSPECTION, CLEANING
AND TIGHTENING OF THESE TERMINALS (BY QUALIFIED PERSONELL) MAY BE NECESSARY.

120V.A.C. (230V. OVERSEAS MODELS) SYSTEM TROUBLESHOOTING GUIDE

COMPONENT	SYMPTOM	POSSIBLE SOLUTION/S
SHORE POWER	NO POWER TO PANEL	CHECK DOCKSIDE BREAKER AND/OR RESET BREAKER LOCATED AFT STRBD Q-BERTH.
MICROWAVE/ STOVE TOP	NO POWER	IS BREAKER ON? IS MICROWAVE/STOVE TOP ON? SEE "MICRO/ STOVE TOP MANUAL"
WATER HEATER	NO POWER WON'T HEAT WATER WATER TOO COLD/HOT	IS BREAKER ON? CHECK "RESET" ON HEATER SEE "WATER HEATER MANUAL" FOR LOCATION. SEE "WATER HEATER MANUAL" FOR THERMOSTAT ADJUSTMENT AND/OR ELEMENT REPLACEMENT, SEEK QUALIFIED PERSONELL.
BATTERY CHARGER (OPTIONAL)	NOT CHARGING BATTERY/S	IS SHORE POWER ON? IS BATT. CHARGER BREAKER ON? IS RESET TRIPPED ON BATTERY SWITCH PANEL CHECK FUSE ON BATTERY CHARGER. SEE CHARGER MANUAL FOR DETAILS.

NOTE: BREAKER VALUES SHOWN ARE FOR 120V PANEL VERSION.



BREAKER LIST (120V):

BATTERY CHARGER - 15 AMPS, ETA 3130
WATER HEATER - 15 AMPS, ETA 3130
OUTLETS - 15 AMPS, SERIES 'A'
MICROWAVE - 20 AMPS, SERIES 'A'

BREAKER LIST (230V):

BATTERY CHARGER - 10 AMPS, ETA 3130
WATER HEATER - 10 AMPS, ETA 3130
OUTLETS - 10 AMPS, SERIES 'A'
MICROWAVE - 15 AMPS, SERIES 'A'

DRAWING TITLE: A.C. PANEL SCHEMATIC	
DRAWING NO.: 27058A-8	REVISION NO.: NONE
DRAWN BY: ENG	DATE: 7/15/04

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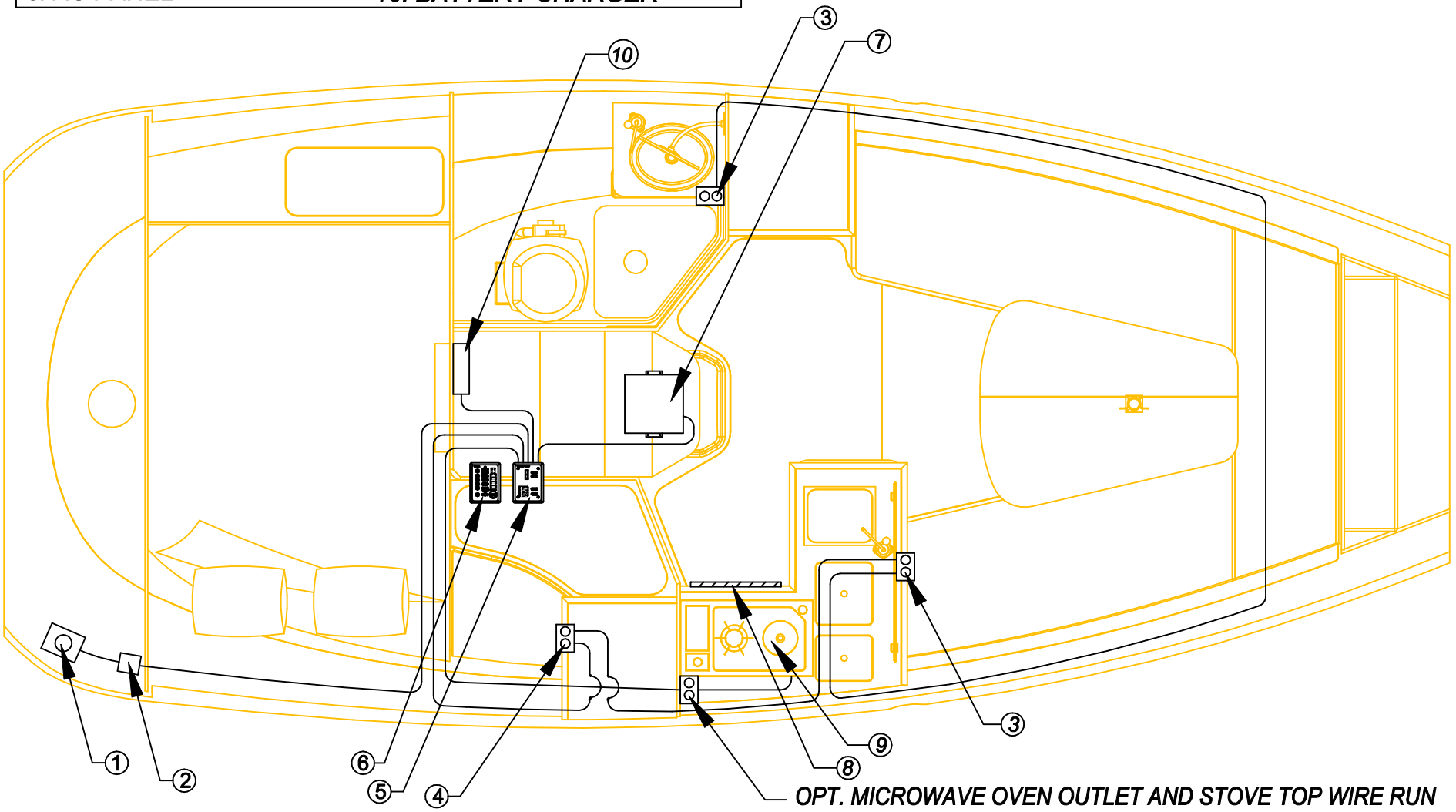
1. SHORE POWER INLET
2. SHORE POWER BREAKER
3. 120 VAC OUTLETS
4. GFCI OUTLETS
5. AC PANEL
6. DC PANEL
7. WATER HEATER
8. MICROWAVE (OPT.)
9. STOVE TOP
10. BATTERY CHARGER



OPT. MICROWAVE OVEN OUTLET AND STOVE TOP WIRE RUN

PAGE 58A-9

DRAWING TITLE: A.C. WIRE RUN LAYOUT	This document discloses information for which HUNTER MARINE CORP. has proprietary rights.
DRAWING NO. 278058A-9	REVISION NO. None
DRAWN BY: ENG	DATE: 07/15/04

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BATTERY CHARGING SYSTEM

BASIC OPERATING INSTRUCTIONS:

① CONNECT SHORE POWER TO DOCKSIDE SUPPLY AND SHORE POWER INLET ON STERN OF BOAT STRBD SIDE

② TURN ON "A.C. MAIN" BREAKER

③ TURN ON "BATTERY CHARGER" BREAKER

NOTE:
CHECK FOR CORRECT FLUID LEVEL IN BATTERIES PRIOR TO USING CHARGER.

DRAWING TITLE: OPTIONAL CHARGING SYSTEM OPERATION	
DRAWING NO.: 278059B-1	REVISION NO.: None
DRAWN BY: ENG	DATE: 07/15/04

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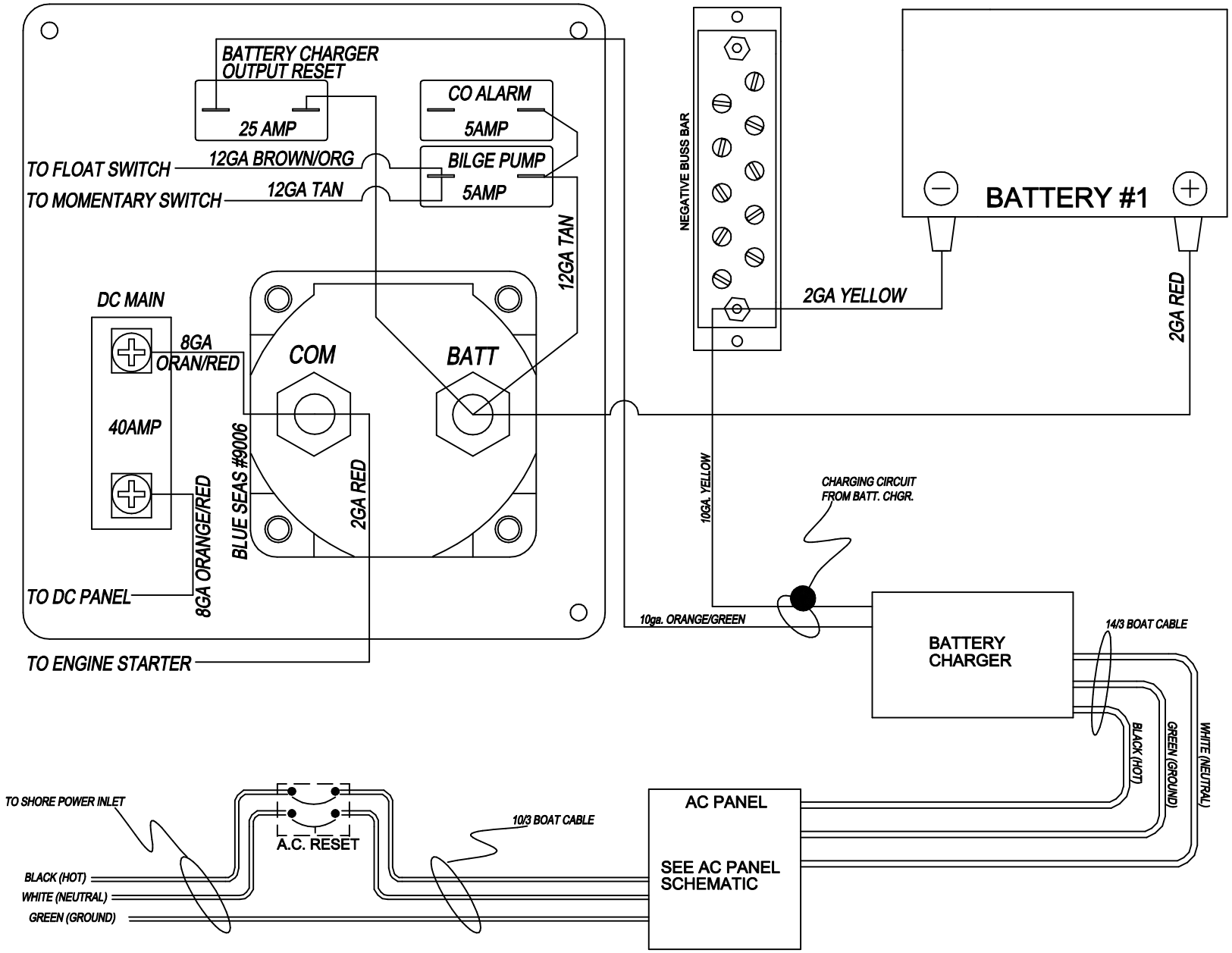

PAGE 59B-2

DRAWING TITLE: CHARGING SYSTEM SCHEMATIC/BATTERY CHARGER	
DRAWING NO. 278059B-2	REVISION NO. NONE
DRAWN BY: ENG	DATE: 7/15/04

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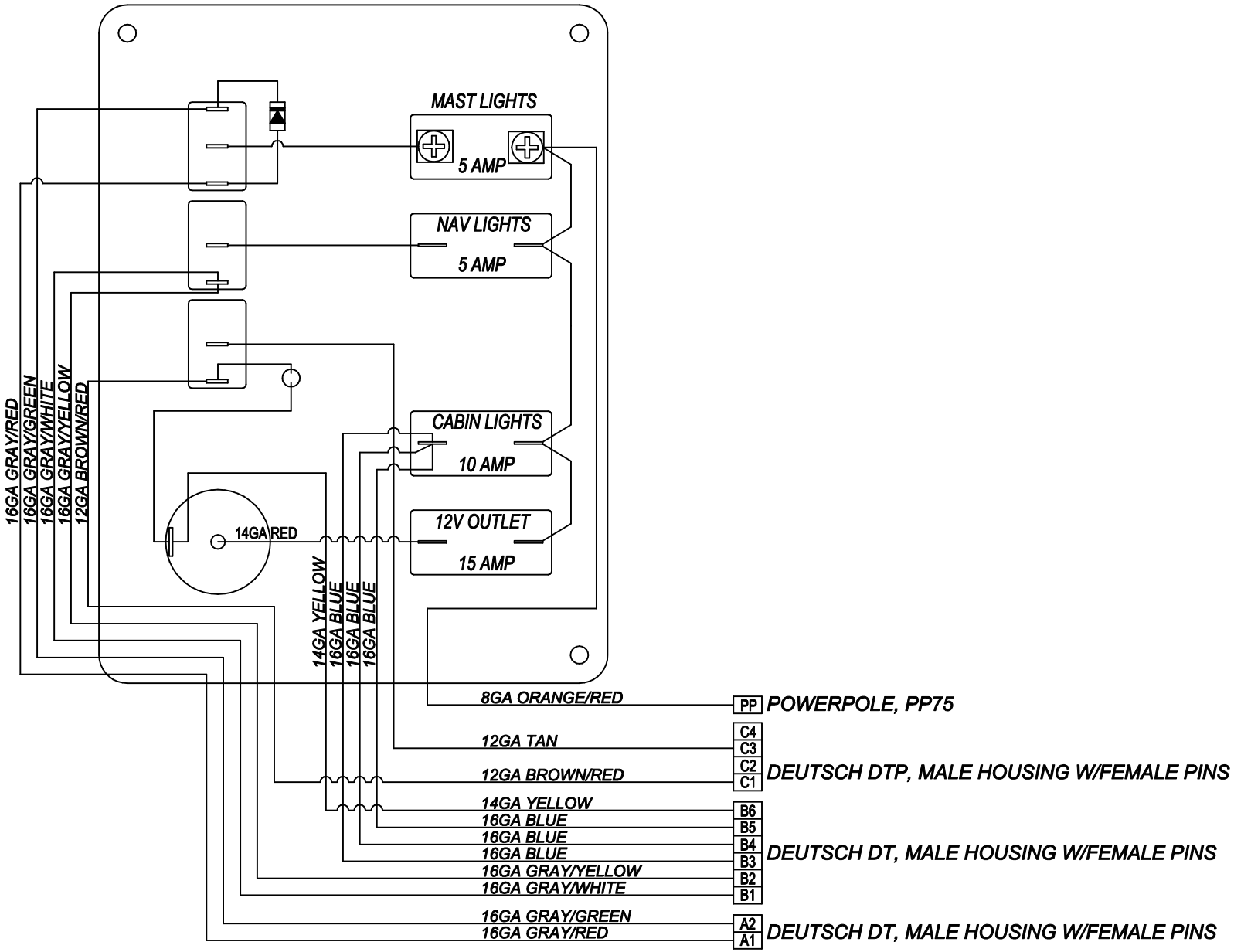

PAGE 60A-1

DRAWING TITLE: DC PANEL SCHEMATIC

DRAWING NO.	REVISION NO.
278060A-1	None
DRAWN BY: ENG	DATE: 07/15/04

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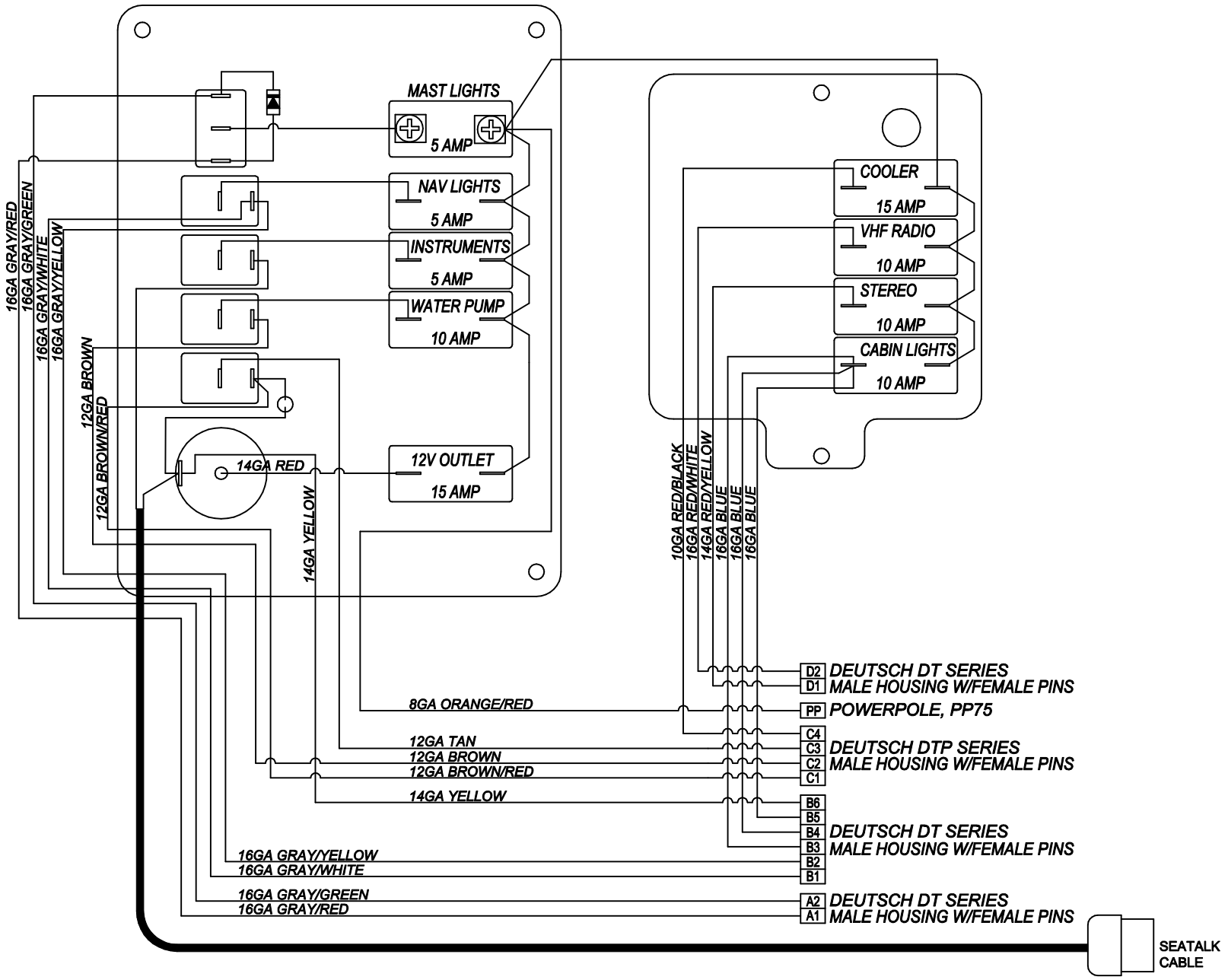

PAGE 60A-2

DRAWING TITLE: DC PANEL SCHEMATIC (CRUISING VERSION)

DRAWING NO. 278060A-2 | REVISION NO. None

DRAWN BY: ENG | DATE: 07/15/04

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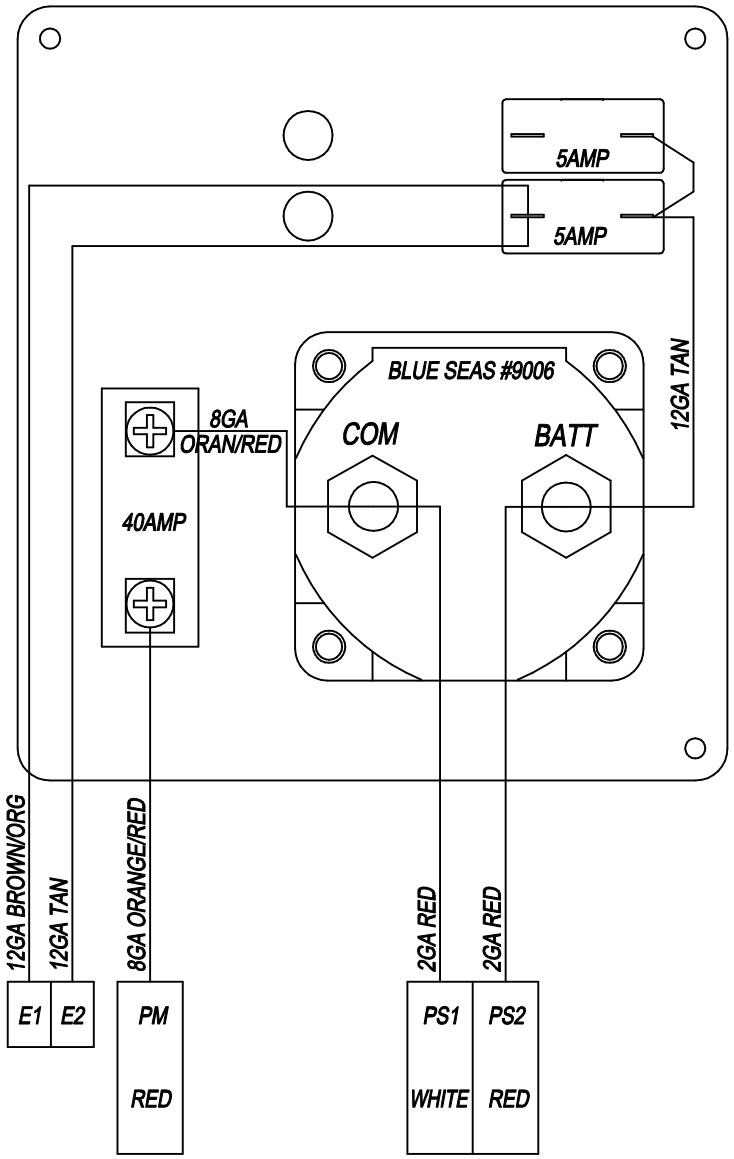

CONNECTOR LIST:

E = DEUTSCH DTP SERIES
MALE HOUSING W/FEMALE PINS

PM = POWERPOLE, PP75
RED HOUSING

PS1 = POWERPOLE, PP120
WHITE HOUSING

PS2 = POWERPOLE, PP120
RED HOUSING

DRAWING TITLE: BATTERY SWITCH PANEL SCHEMATIC	
DRAWING NO. 278060A-3	REVISION NO. None
DRAWN BY: ENG	DATE: 07/15/04

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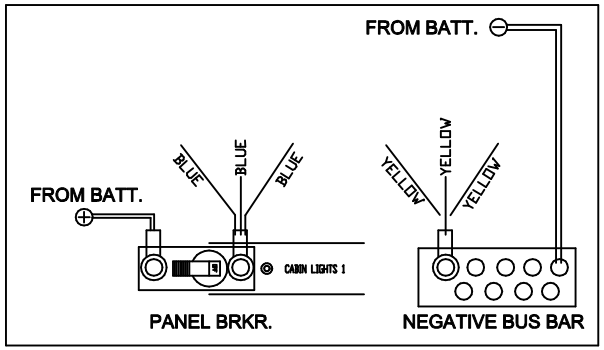
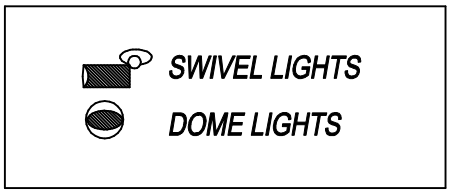
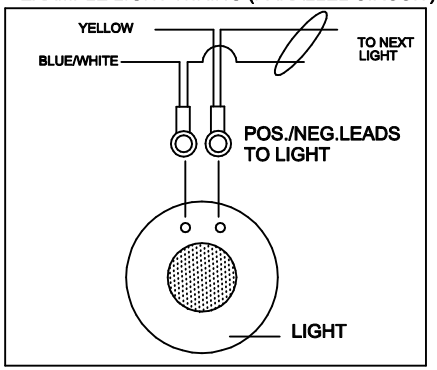
EXAMPLE SWITCH PANEL WIRING (PARALLEL CIRCUITS)

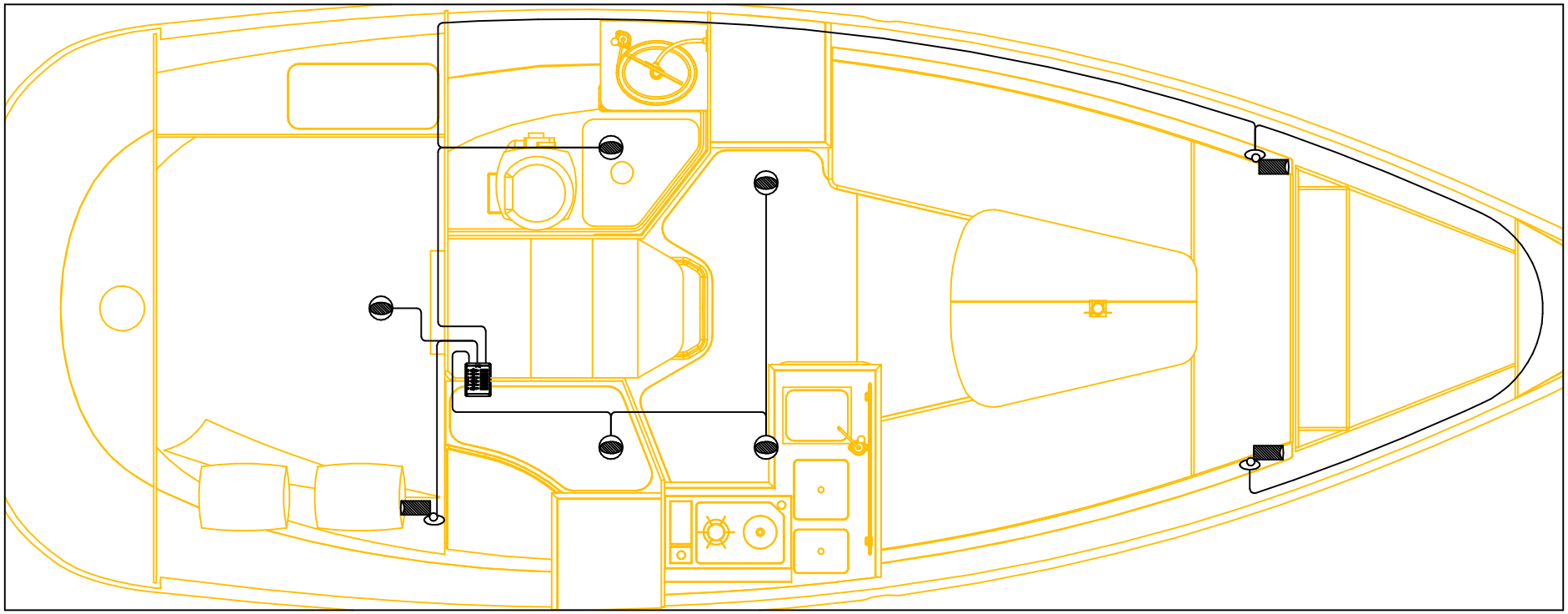




EXAMPLE LIGHT WIRING (PARALLEL CIRCUIT)



EACH CIRCUIT IN PARALLEL, BLUE (LOAD TO BREAKER) AND YELLOW NEGATIVE TO NEGATIVE BUS BAR (SEE EX.)



PAGE 60B

DRAWING TITLE: 12VDC LIGHTING LAYOUT

DRAWING NO.	REVISION NO.
278060B	NONE
DRAWN BY: ENG	DATE: 07/15/04

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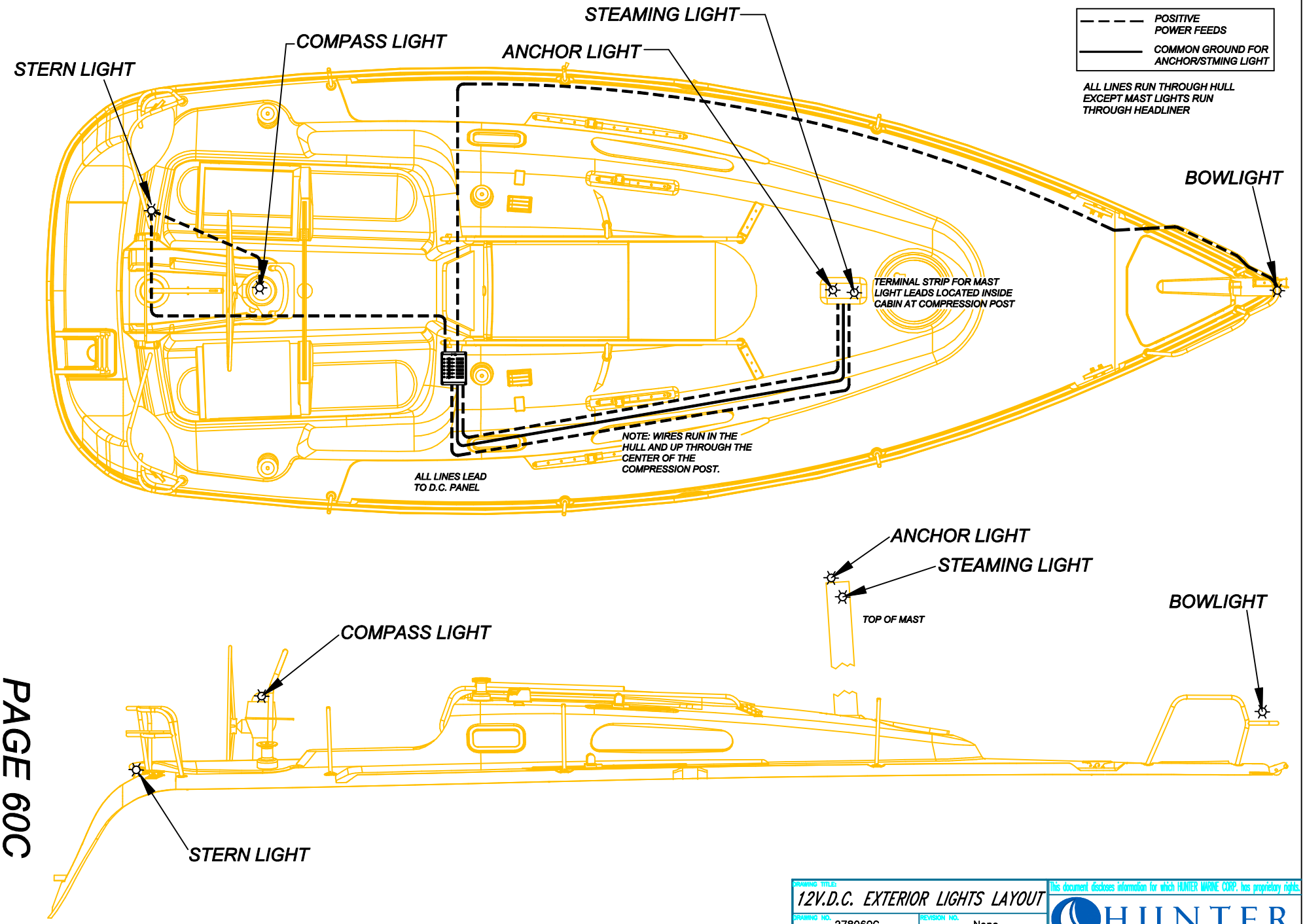

PAGE 60C

DRAWING TITLE: 12V.D.C. EXTERIOR LIGHTS LAYOUT	
DRAWING NO. 278060C	REVISION NO. None
DRAWN BY: ENG	DATE: 07/15/04

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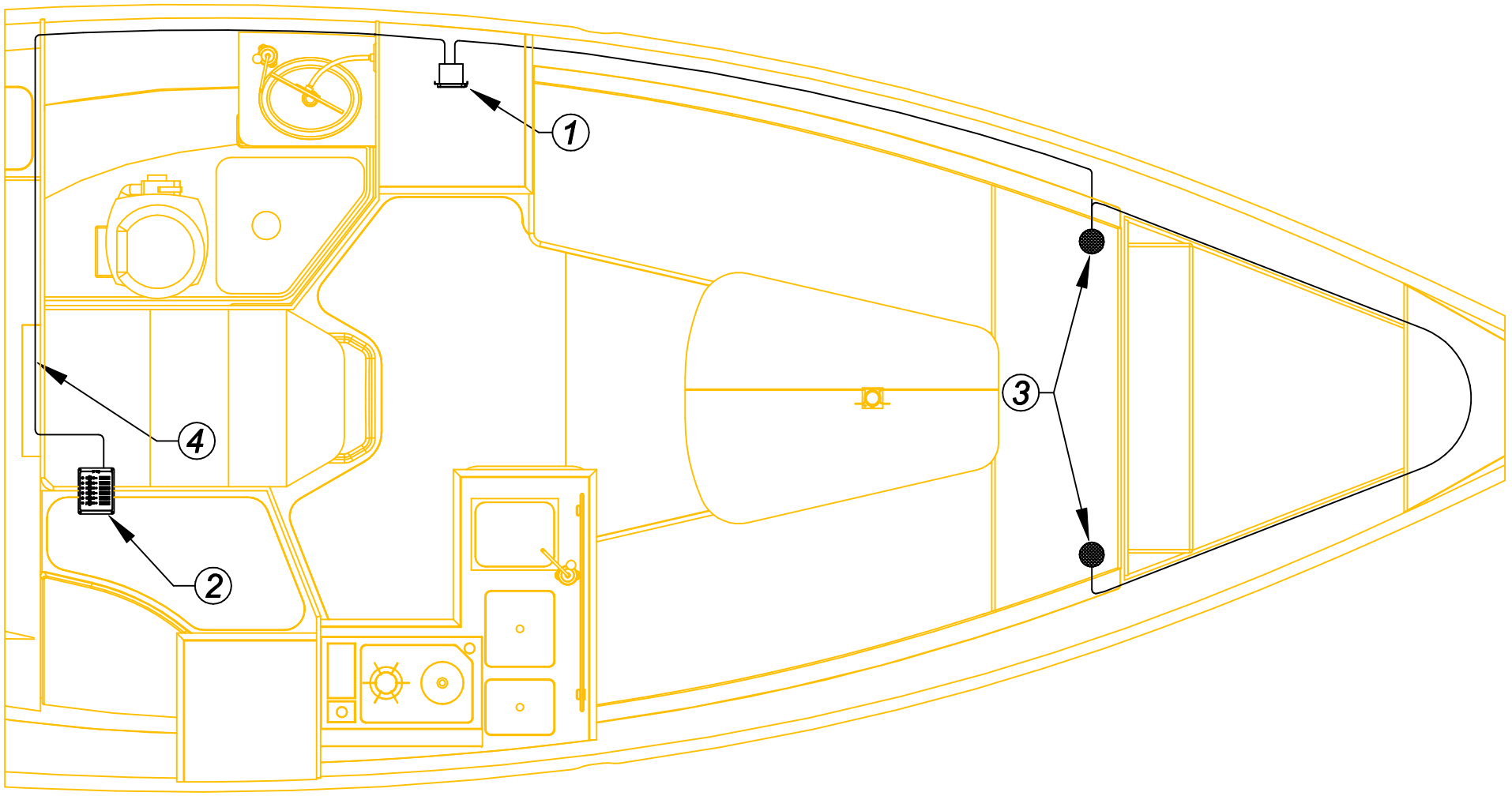

1. STEREO CD PLAYER
2. DC MAIN PANEL
3. MAIN CABIN SPEAKERS
4. WIRE RUN

PAGE 60D

DRAWING TITLE: OPTIONAL STEREO LAYOUT	
DRAWING NO. 278060D	REVISION NO. None
DRAWN BY: ENG	DATE: 07/15/04

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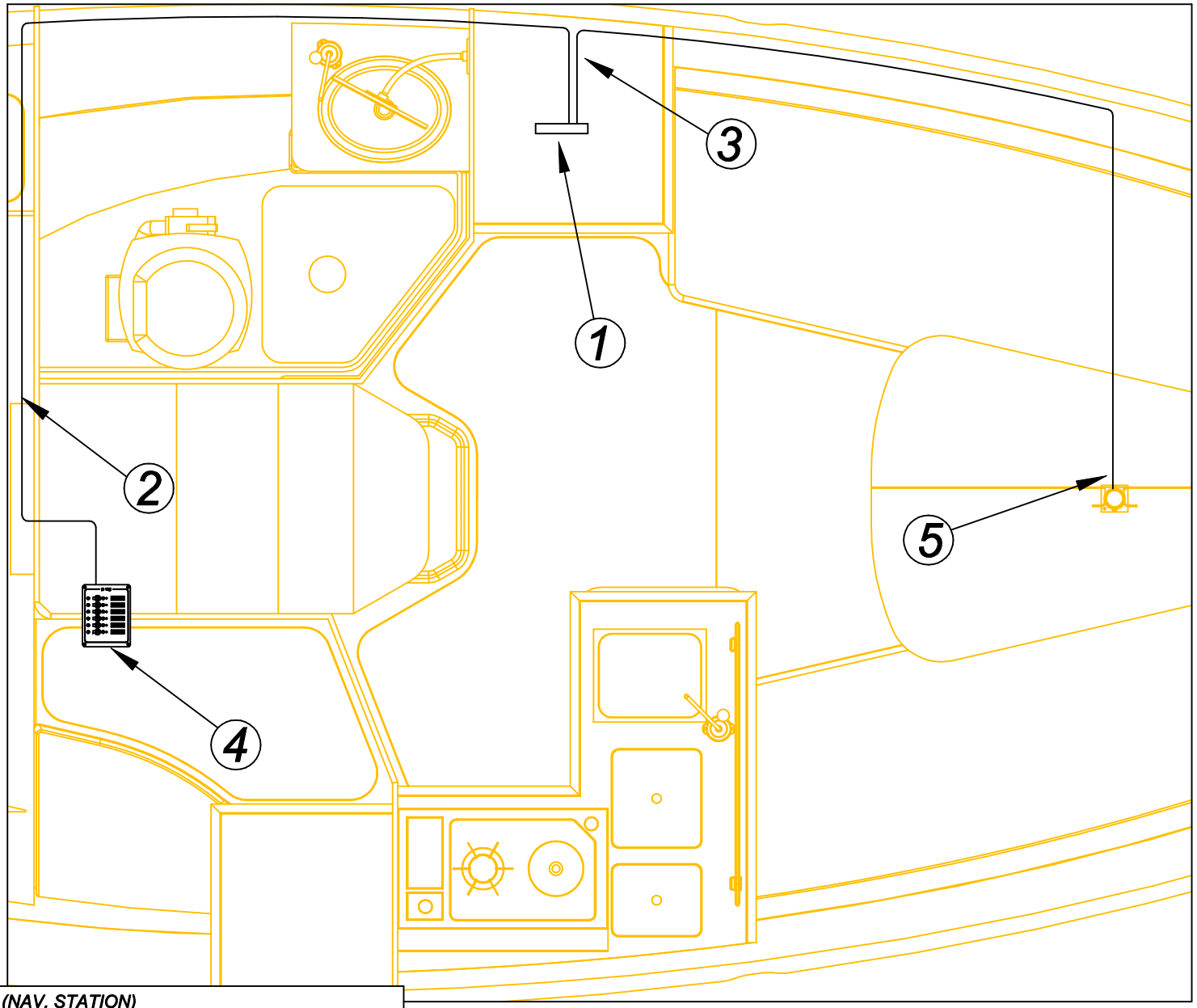

1. V.H.F RADIO (NAV. STATION)
2. POWER LEADS FROM MAIN DISTRIBUTION PANEL TO RADIO
3. VHF RADIO COAX CABLE TO ACCESS PANEL
4. LOCATION OF MAIN DISTRIBUTION PANEL
5. COAX CABLE @ MAST STEP HEADLINER ACCESS PLATE

COAX CABLE RUNS THROUGH THE HEADLINER

PAGE 60E

DRAWING TITLE: OPTIONAL VHF RADIO WIRE RUNS LAYOUT	
DRAWING NO. 278060E	REVISION NO. None
DRAWN BY: ENG	DATE: 07/15/04

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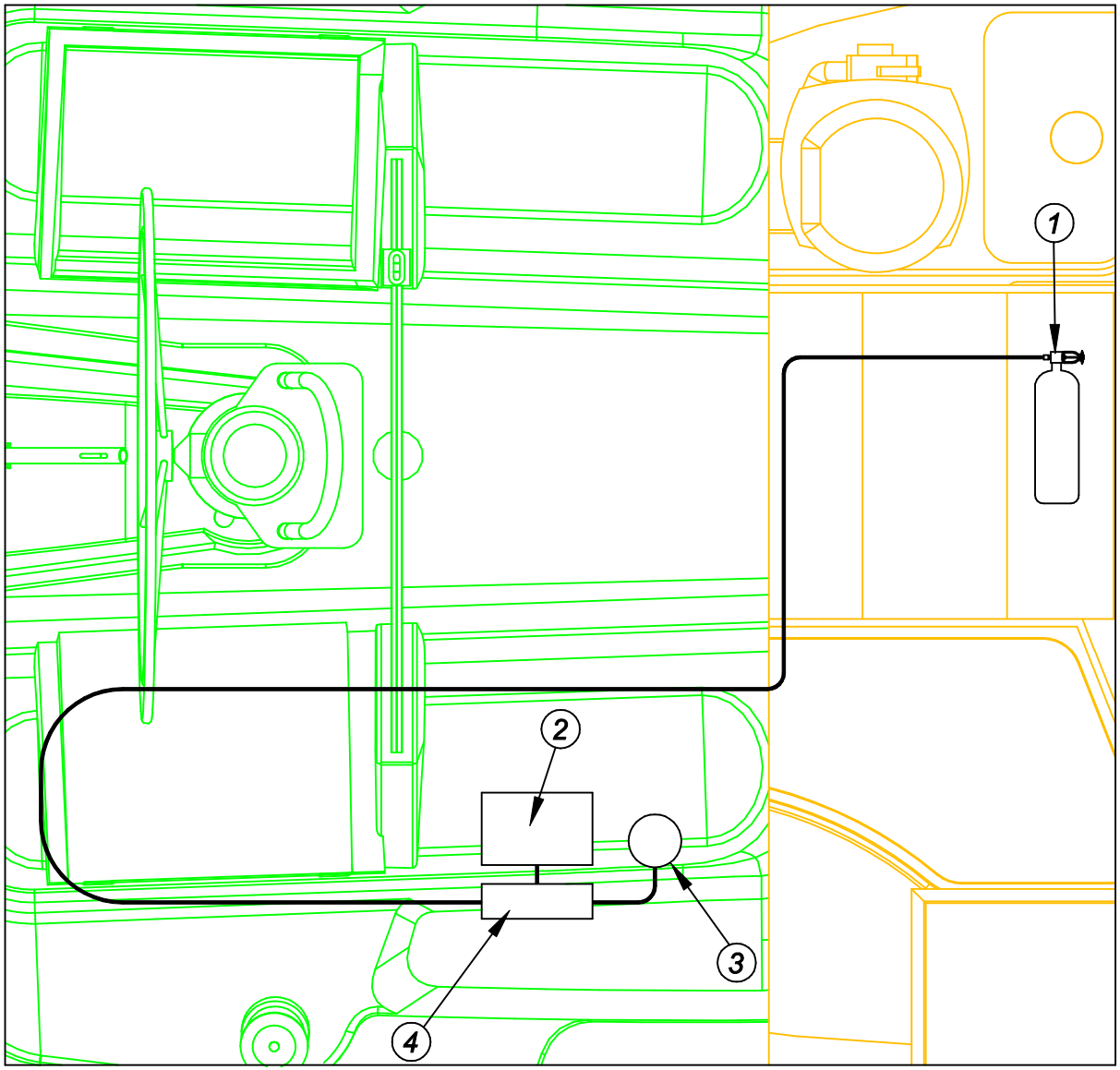

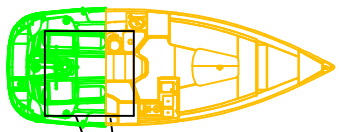

ENLARGEMENT OF BOXED AREA

1. AUTOMATIC FIRE EXTINGUISHER
2. ENGINE PANAL (STRBD COCKPIT)
3. DISPLAY (STRBD COCKPIT)
4. ENGINE INTERRUPT CONTROL BOX

PAGE 60F-1

DRAWING TITLE: OPT AUTOMATIC FIRE EXTINGUISHER LAYOUT	This document discloses information for which HUNTER MARINE CORP. has proprietary rights.
DRAWING NO. 278060F-1	REVISION NO. None
DRAWN BY: ENG	DATE: 07/15/04

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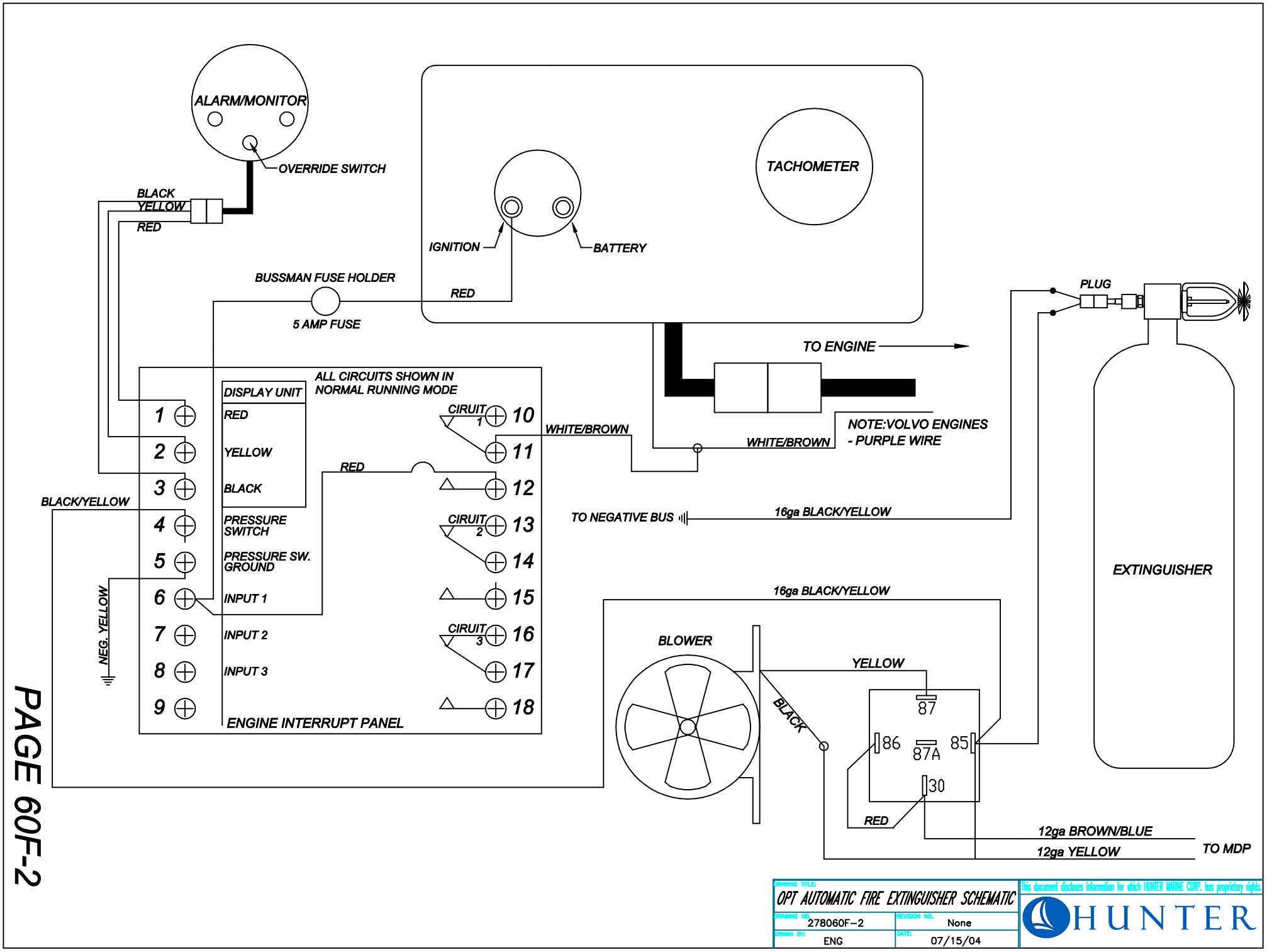

PAGE 60F-2

DRAWING TITLE: OPT AUTOMATIC FIRE EXTINGUISHER SCHEMATIC	
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H27 ELECTRICAL AMPERAGE DATA

12V.D.C. SYSTEM	
CIRCUIT/BREAKER	**AMPERAGE**
D.C. MAIN	40amp
CABIN LIGHTS	10amp
WATER PRESSURE	10amp
STEREO	10amp
COOLER	5 or 15amp
INSTRUMENTS	5amp
V.H.F.	10amp
ANCHOR LIGHT	5amp
STEAMING LIGHT	5amp
RUNNING LIGHTS	5amp
COMPASS (TIES TO RUN. LIGHTS)	

110V.A.C. SYSTEM	
SHORE POWER A.C. MAIN	30 amp
OUTLETS	15amp
MICROWAVE OVEN/STOVE	20amp
WATER HEATER	20amp
BATTERY CHARGER	15amp

220V.A.C. SYSTEM (ON SELECT OVERSEAS MODELS ONLY)	
SHORE POWER A.C. MAIN	15 amp
OUTLETS	10amp
MICROWAVE OVEN/STOVE	15amp
WATER HEATER	10amp
BATTERY CHARGER	10amp

MASTER ELECTRICAL WIRING/CABLE DATA

DESCRIPTION	WIRE SIZE	WIRE COLOR
LPG SWITCH/POWER	16 gauge	ORANGE/RED
TANK DISPLAY	16 gauge	RED/ORANGE
FUEL SENDER	16 gauge	PINK,ORANGE/WHITE
NEGATIVE	16 gauge	YELLOW
FWD WATER SENDER	16 gauge	ORANGE/BLUE, PINK/BLACK
NEGATIVE	16 gauge	YELLOW
WATER PUMP	12 gauge	BROWN
NEGATIVE	12 gauge	YELLOW
VACCU FLUSH	10 gauge	BROWN/PINK
NEGATIVE	16 gauge	YELLOW
AFT WASTE SENDER	16 gauge	ORANGE/GREEN, PINK/GRAY
NEGATIVE	16 gauge	YELLOW
AFT SUMP PUMP	12 gauge	BROWN/BLACK
NEGATIVE	12 gauge	YELLOW
FWD MACERATOR	10 gauge	BROWN/WHITE
NEGATIVE	16 gauge	YELLOW
VHF	16 gauge	RED/WHITE
NEGATIVE	16 gauge	YELLOW
COURTESY LIGHTS	16 gauge	BLUE/WHITE
NEGATIVE	16 gauge	YELLOW
CABIN LIGHTS	10 -16 gauge	BLUE
NEGATIVE	16 gauge	YELLOW
PORT FWD SPEAKERS	16 gauge	WHITE/RED
STBD FWD SPEAKERS	16 gauge	WHITE/BROWN
PORT AFT SPEAKER	16 gauge	WHITE/GREEN
STBD AFT SPEAKER	16 gauge	WHITE/VIOLET
PORT ARCH SPEAKER	16 gauge	WHITE/PINK
PORT NEGATIVE	16 gauge	WHITE/YELLOW
STBD ARCH SPEAKER	16 gauge	WHITE/GRAY
STBD NEGATIVE	16 gauge	WHITE/BLACK
COMPASS BOW LIGHT	16 gauge	GRAY/WHITE
STERN LIGHT	16 gauge	GRAY/YELLOW
NEGATIVE	16 gauge	YELLOW
MAST LIGHT	16 gauge	GRAY
STEAMING LIGHT	16 gauge	GRAY/GREEN
ANCHOR LIGHT	16 gauge	GRAY/RED
HOUSE BATTERY	2 gauge - 3/O	RED
NEGATIVE	2 gauge - 3/O	YELLOW
AC/DC PANEL	6 gauge	ORANGE/RED
NEGATIVE	6 gauge	YELLOW
ENGINE	2 gauge	RED
HALYARD	2 gauge	YELLOW
T.V.	10 gauge	RED
NEGATIVE	10 gauge	YELLOW
REFRIGERATION	10 gauge	RED/BLACK
FREEZER	10 gauge	RED/WHITE
NEGATIVE	10 gauge	YELLOW
STEREO/DVD	12 gauge	ORANGE/GREEN
STEREO POWER	12 gauge	RED
NEGATIVE	12 gauge	YELLOW
INVERTER GROUND	4 gauge	GREEN/YELLOW
WINDLASS SWITCH	16 gauge	TAN
MANUAL BILGE	12 gauge	BROWN/RED
AUTO BILGE	12 gauge	BROWN/ORANGE
NEGATIVE	12 gauge	YELLOW
AFT SUMP PUMP	12 gauge	BROWN/BLACK
FWD SUMP PUMP	12 gauge	BROWN/YELLOW
AUTO PILOT	8 gauge	RED
NEGATIVE	8 gauge	YELLOW
CHAINPLATE GROUND	4 gauge	GREEN/YELLOW
BATTERY CHARGER # 1	8 gauge	ORANGE/RED
BATTERY CHARGER # 2	8 gauge	ORANGE/GREEN

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DRAWING TITLE: STEERING PEDESTAL

DRAWING NO.	REVISION NO.	DATE:
278062	None	07/15/04

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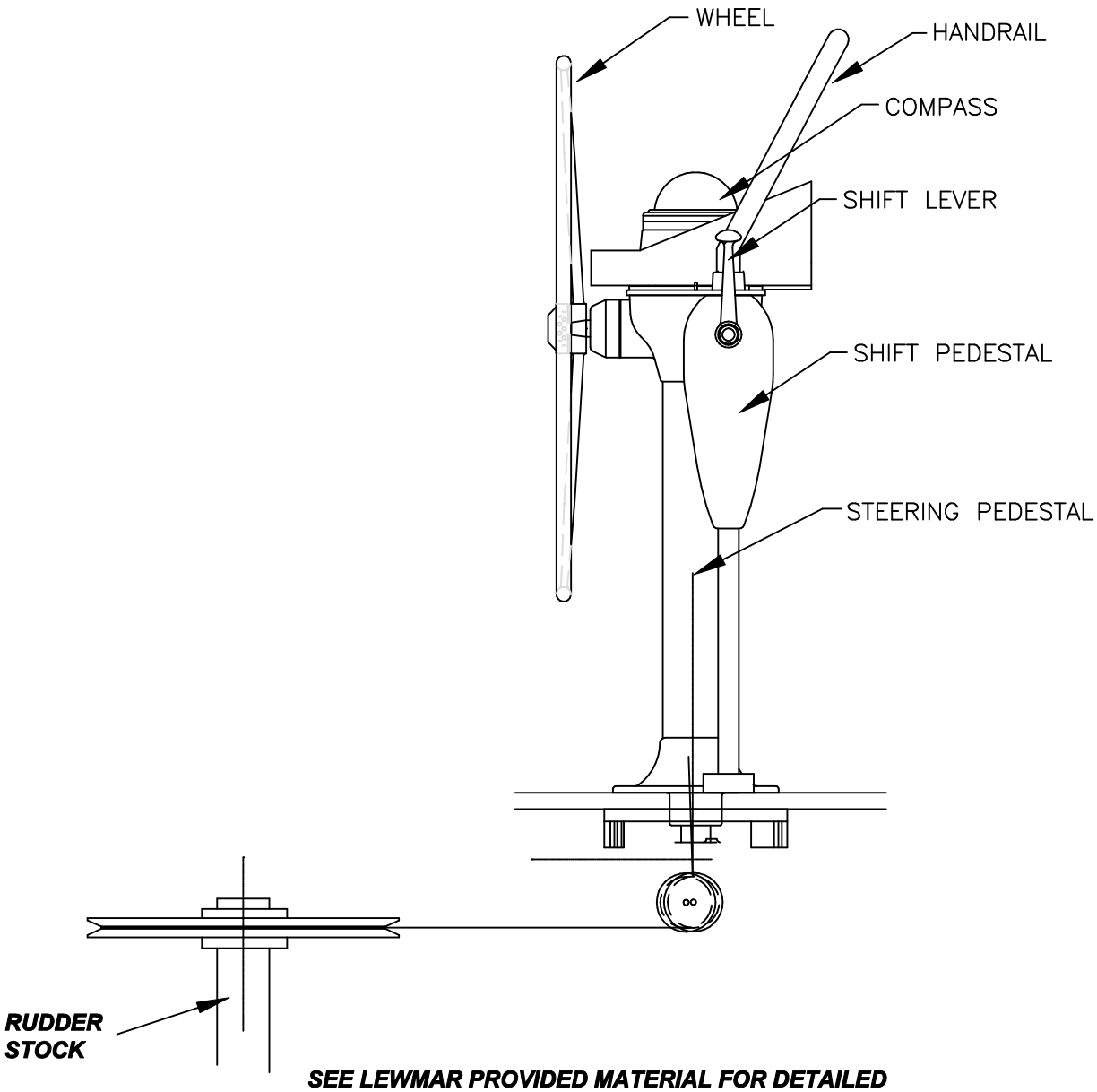
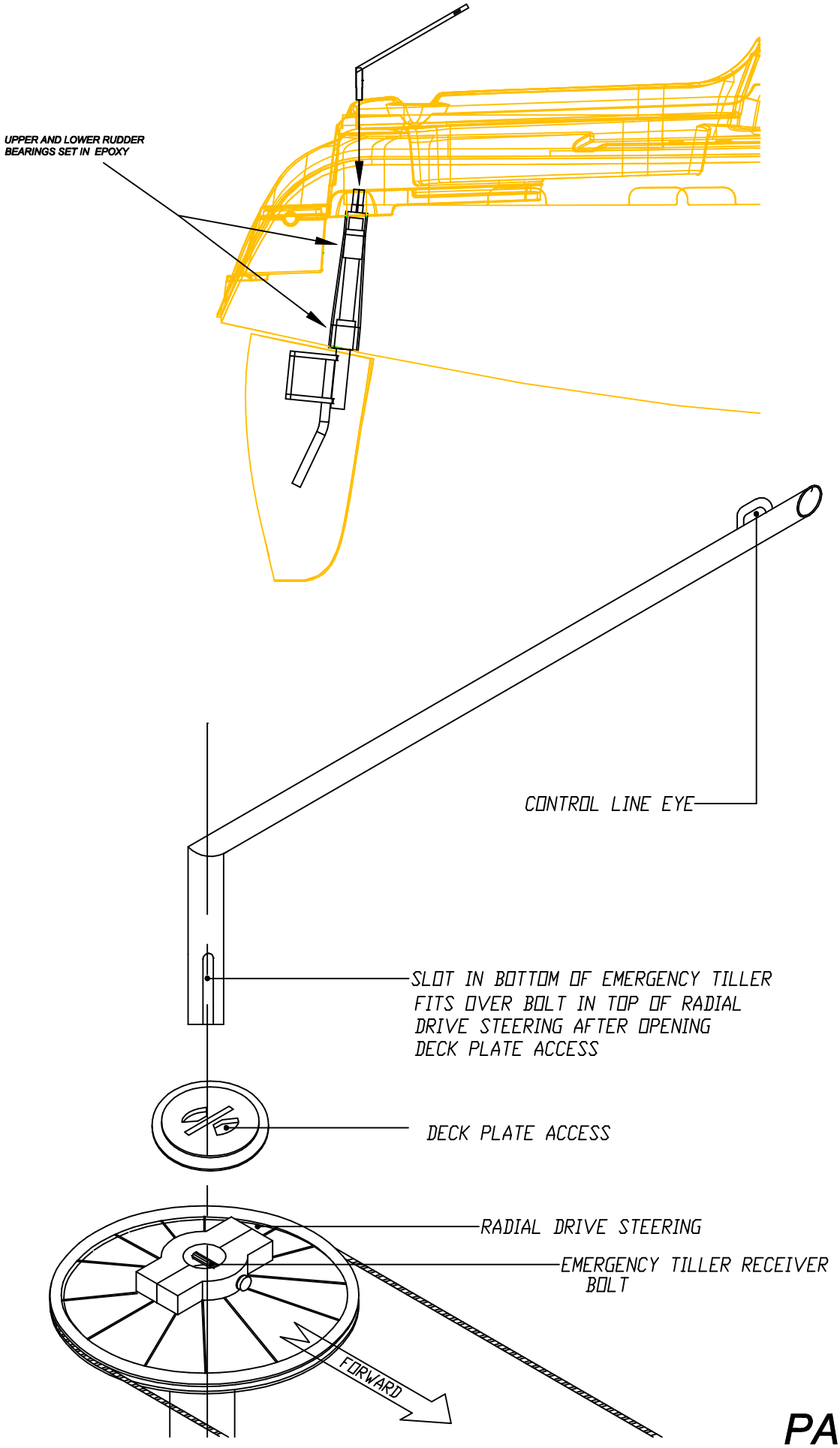


SEE LEWMAR PROVIDED MATERIAL FOR DETAILED INFORMATION ON COMPONENTS, MAINTENANCE, ETC



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DRAWING TITLE: EMERGENCY TILLAER ARM

DRAWING NO. 278063

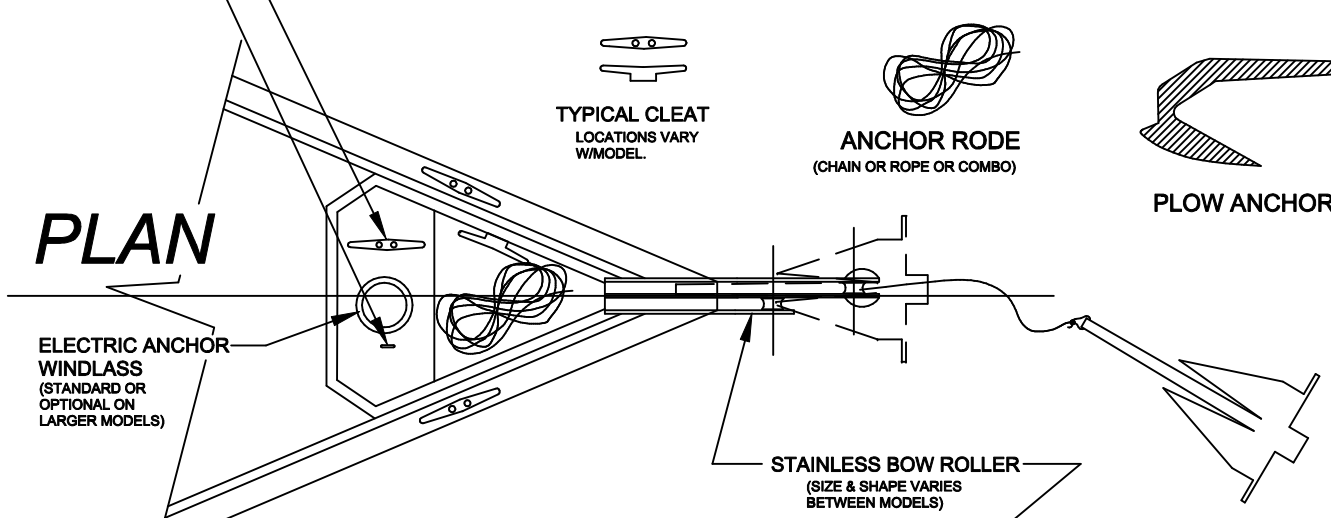
REVISION NO. None

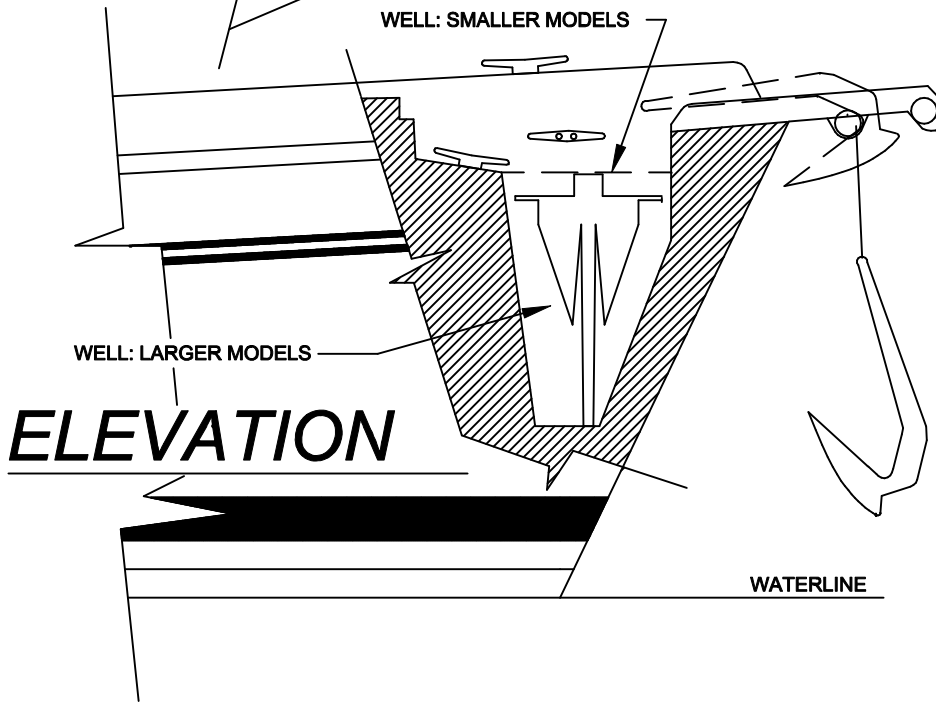
DRAWN BY: ENG

DATE: 07/15/04

NOTE: THE FORWARD "U" BOLT IN THE ANCHORWELL IS CONSIDERED THE STRONG POINT. THAT SHOULD BE USED IF THE VESSEL IS TO BE TOWED.

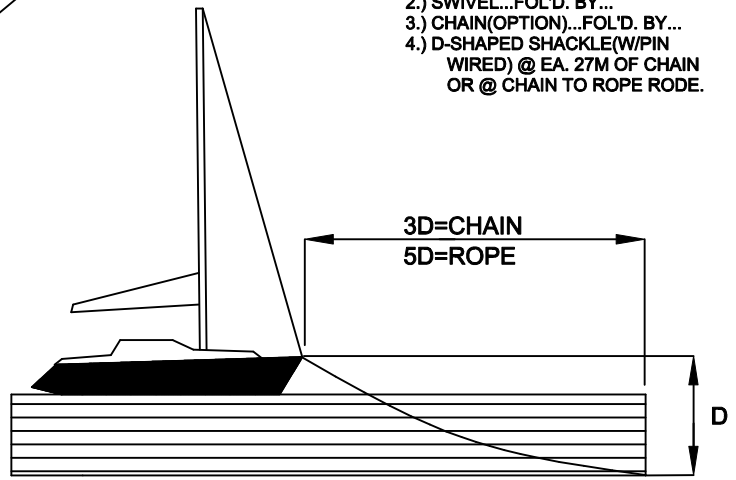
NOTE: ALWAYS SECURE ANCHOR RODE TO THE CLEAT OR LASH ANCHOR SECURE TO BOW ROLLER IN ADDITION TO THE QUICK PIN!





GROUND TACKLE:

1.) BOW SHACKLE(W/PIN WIRED) @ ANCHOR...FOL'D. BY...
2.) SWIVEL...FOL'D. BY...
3.) CHAIN(OPTION)...FOL'D. BY...
4.) D-SHAPED SHACKLE(W/PIN WIRED) @ EA. 27M OF CHAIN OR @ CHAIN TO ROPE RODE.



DRAWING TITLE: BASIC ANCHORING DIAGRAM	
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